

FY2022-FY2051

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- *The amount and timing of receipt of any distributions from the Federal Emergency Management Agency and private insurance companies to repair damage caused by Hurricanes Maria and Irma, earthquakes, and the COVID-19 pandemic;*
- *The amount and timing of receipt of any amounts allocated to Puerto Rico and provided under the Community Disaster Loans Program;*
- *The amount and timing of any additional amounts appropriated by the United States government to address the impacts of the COVID-19 pandemic;*
- *The amount and timing of receipt of any additional amounts appropriated by the United States government to address the funding gap described herein;*
- *The timeline for completion of the work being done by the Puerto Rico Electric Power Authority ("PREPA") to repair PREPA's electric system and infrastructure and the impact of any future developments or issues related to PREPA's electric system and infrastructure on Puerto Rico's economic growth;*
- *The impact of the COVID-19 pandemic on the financial, social, economic, and demographic condition of Puerto Rico;*
- *The impact of the measures described herein on outmigration; and*
- *The impact of the resolution of any pending litigation in the Title III cases*

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List of Acronyms and Key Terms

2021 Fiscal Plan	Refers to this Fiscal Plan, certified in June 2021
AAFAF	Puerto Rico Fiscal Agency and Financial Advisory Authority (Spanish acronym)
ACI	American Concrete Institute
AFC	Automatic Fare Collection system
Agency, Authority	Refers to the Puerto Rico Highway and Transportation Authority
AMA	Puerto Rico Metropolitan Bus Authority
AQI	Air Quality Index
ARP	American Rescue Plan
B2A	Budget to Actuals monthly report provided to FOMB from HTA
BRT	Bus Rapid Transit
CAGR	Compound Annual Growth Rate
CapEx	Capital expenditures
CARES	Coronavirus Aid, Relief, and Economic Security Act funding
CDFO	Chief Discretionary Funds Officer, a designated member of the discretionary grant management team
CDBG-DR	Community Development Block Grant Disaster Recovery Program
CDBG-MIT	Community Development Block Grant Mitigation Program
CFR	Code of Federal Regulations
CIG	Capital Investment Grants
CIP	Capital Improvement Plan
CO	Change Orders
Commonwealth Certified Fiscal Plan	Commonwealth of Puerto Rico Fiscal Plan certified in April 2021
CPI	Consumer Price Index, or inflation
CW	Commonwealth of Puerto Rico
DB	Design-Build Contracting
DDFO	Deputy Discretionary Funds Officer, a designated member of the discretionary grant management team
DDIR	Detailed Damage Inspection Reports
DOH	Department of Health
DOJ	Department of Justice
DPS	Department of Public Safety
DTL	Dynamic toll lane for transit system
DTOP	Departamento de Transportación y Obras Públicas
ER	Emergency Repair
EFL	Eastern Federal Lands – Division of US Federal Highway Administration
EFT	Electronic Funds Transfers
ETC	Electronic Toll Collection
EWO	Extra Work Orders
FAHP	Federal-Aid Highway Program
FAST	Fixing America's Surface Transportation Act funding
Federal Government	The United States Federal Government
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FOMB	Financial Oversight and Management Board for Puerto Rico
FRR	Farebox recovery ratio
FTA	Federal Transit Administration
GNP	Gross National Product
Government	Government of Puerto Rico
Governor	Governor Pedro Rafael Pierluisi Urrutia
HTA	Refers to Puerto Rico Highway and Transportation Authority
Hacienda	Puerto Rico Department of Treasury
Hurricanes	Hurricane Irma and Hurricane Maria
INFRA	Infrastructure for Rebuilding America federal grants
Island	Puerto Rico
ITS	Integrated Transportation System
KPIs	Key Performance Indicators
June 2020 Certified Fiscal Plan	HTA Fiscal Plan certified by the Financial Oversight and Management Board in May 2020
LRTP	Long Range Transportation Plan
MOU	Memorandum of Understanding
NEPA	National Environmental Policy Act
NHS	National Highway System
NTP	Notice to Proceed
OOH	Out of Home advertising
OpEx	Operating Expenditures
ORT	Open Road Tolling

P3A	Puerto Rico Public-Private Partnerships Authority
PCI	Payment Card Industry-compliant
PEMOC	Programa Estatal de Modernización de Carreteras
PMIS	Project Management Information Systems
POS	Point-of-sale machines, used to process card payments at transit stations
PPP/P3	Public-Private Partnership
PR	Puerto Rico
PRASA	Puerto Rico Aqueduct and Sewer Authority
PREPA	Puerto Rico Electric and Power Authority
PRHP	Puerto Rico Highway Program
PRHTA (or HTA)	Puerto Rico Highway and Transportation Authority
PRITA	Puerto Rico Integrated Transit Authority
PROMESA	Puerto Rico Oversight, Management and Economic Stability Act
PS&E	Plans, Specifications, and Estimate package
RAISE	Rebuilding American Infrastructure with Sustainability and Equity (RAISE) grant, formerly known as BUILD and TIGER
RFI	Request for Information
RFP	Request for Proposal
ROW	Right of Way
RSS	Roadside equipment
SOGRA	State of Good Repair
SOP	Standard Operating Procedure
TOD	Transit-Oriented Development
TPB	Transportation Policy Board
TU	Tren Urbano transit system
TVM	Ticket Vending Machines
USDOT	The United States Department of Transportation
USHUD	The U.S. Department of Housing and Development
VTP	Voluntary Transition Program
VRM	Vehicle Revenue Miles
USVI	The United States Virgin Islands
YTD	Year to Date

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PART I – EXECUTIVE SUMMARY

Every resident of Puerto Rico deserves safe, well-maintained roads and an efficient and reliable transportation system.

A well-functioning transportation system at its core provides mobility: allowing its residents to travel where they want, when they want, safely and affordably. A well-performing transportation system is critical to the safe and affordable movement of goods and people. The Puerto Rico Highways and Transportation Authority (HTA) is a key stakeholder in Puerto Rico's transportation sector, responsible for a majority of the roads and key parts of its transit system; as such, HTA has critical influence in determining the current and future state of the transportation sector of Puerto Rico.

Unfortunately, Puerto Rico's current transportation system continues to lag behind national standards for quality, safety, and reliability. Only 4% of Puerto Rico's highways are in good condition, compared to a median of 61% in the U.S., while fatality rates are 80% higher than the U.S. median.¹ In addition, the absence of a reliable transit system drives increased traffic congestion, as residents lack an alternative to private vehicle transportation. Among US cities, San Juan has the seventh-longest average commute at 31.2 minutes.² Drivers lose 58 hours each year to traffic congestion at a cost of \$1,274 per driver and \$400 million to the city.³ Meanwhile, the main public transportation alternative, Tren Urbano, has one of the lowest ridership among transit systems in North America, with approximately 5 million annual riders, compared to an initial estimate of 41 million annual riders. Tren Urbano also has one of the worst financial performances, recovering only 7 cents on every dollar of operational cost, while its peers recover approximately 25 cents on average.⁴

The transportation sector must undergo a transformation to support the Island's economic development and recovery.

The Commonwealth 2021 Certified Fiscal Plan laid out a series of transportation sector reforms that had been recommended in the Financial Oversight and Management Board's (FOMB's) January 29, 2021 letter pursuant to PROMESA section 205(a). FOMB

¹ Highway Statistics 2018, Federal Highway Administration
(<https://www.fhwa.dot.gov/policyinformation/statistics/2018/hm64.cfm>);
(<https://www.fhwa.dot.gov/policyinformation/statistics/2018/fi30.cfm>).

² https://realestate.usnews.com/places/rankings/best-places-to-live?src=usn_pr

³ <https://static.tti.tamu.edu/tti.tamu.edu/documents/mobility-report-2019.pdf>; <https://fnrrix.com/scorecard-city/?city=San%20Juan%2C%20PR&index=163>

Costs include lost productivity, increased freight movements costs, higher operating costs and decreased reliability.
For more information, see

<https://www.transportation.gov/sites/dot.gov/files/docs/2016%20Revised%20Value%20of%20Travel%20Time%20Guidance.pdf>

⁴ Ridership Data: Public Transportation Ridership Report, American Public Transportation Association, Found online at: <https://www.apta.com/wp-content/uploads/2018-Q4-Ridership-APTA.pdf> / Farebox Recovery: National Transit Database, Found online at: <https://www.transit.dot.gov/ntd/ntd-data>. TU Initial Ridership Estimates: Review of the Tren Urbano Finance Plan, US General Accounting Office, Dated 03/31/2000, p. 2.

highlighted a series of reforms to address the root causes of the challenges facing the transportation sector, namely:

- 1) Individual modes of transportation having overlapping and fragmented ownership
- 2) Poor performance management within individual modes of transportation and little multi-modal coordination
- 3) The system is not maximizing funding potential, leaving public and private dollars on the table.

To address these issues, six recommendations were proposed as part of the transportation sector reforms:

- 1) Restructure transportation assets into mode specific entities (e.g., toll roads, non-toll roads, mass transit)
- 2) Create an overreaching Transportation Policy Board to guide multi-modal transportation strategy across the Island
- 3) Develop and use objective frameworks for project selection
- 4) Improve performance management of contractors through integration in public systems, performance-based contracts, and better supervision
- 5) Enhance effectiveness of governance by reforming entity boards of directors, and, where relevant, to include fewer political appointees and more subject-matter experts
- 6) Maximize utilization of available grants through a more comprehensive federal grants strategy and improved bankability to attract private capital

The 2021 HTA Fiscal Plan affirms and supports this broader transformation of the transportation system. As an owner of toll roads, non-toll roads, and transit assets, HTA must work with other transportation entities on the island (e.g., DTOP, PRITA) to ensure the successful execution of the reform.

As the entity responsible for Puerto Rico's major highways and commuter rail, HTA plays a key role in implementing reforms and realizing their benefits, as well as achieving financial responsibility and access to the capital markets.

These reforms should be adopted in conjunction with the fiscal measures laid out to improve revenue generation and restore capital delivery outcomes for HTA's responsibilities. Among HTA's objectives, four tie directly to broader transportation sector reform: (1) promote the safe and easy movement of vehicles and individuals; (2) reach and maintain SOGR to ensure the people of Puerto Rico have access to quality roads and modes of transportation; (3) contribute to the development of Puerto Rico; (4) build a strong, resilient road network by strengthening assets that are prone to natural

disasters. Achieving these objectives requires HTA to become fiscally sustainable and operationally efficient. Through FY21, HTA failed to make progress on key initiatives designed to improve its ability to deliver on its core objectives, particularly in enhancing revenues and improving operational efficiency and accountability. While there continues to be progress in the rate of disbursements in the capital program—notable given the challenges of the COVID-19 pandemic—realizing the transformation will require a renewed commitment from HTA to reform its operating model, sustain revenue streams, and accelerate capital project delivery.

In FY21, HTA had mixed performance against revenue and capital expenditure objectives of the 2020 Certified Fiscal Plan.

As of April 30, 2021, revenues underperformed across several categories and the budgeted capital program experienced delivery shortfalls, with some improvements as compared to FY20 (see Exhibit 1). HTA's most recent Budget-to-Actuals reflect a 4% positive variance in HTA's own revenues and faster-than-expected recovery in traffic volumes from the COVID-19 pandemic, offset by continued non-collection of toll fines and severely reduced transit operations. CapEx disbursements for the Federal Construction program were 9% below budget, while non-federal construction program and emergency repair program were 22% and 18% over budget, respectively. The underspending in capital investments, a key function of HTA, reveals inefficiencies in the CapEx delivery program due to the lack of a clear and consistent management structure, as well as the lack of prioritization of critical improvement and maintenance activities. The emergence of the COVID-19 pandemic has only further exacerbated HTA's financial challenges and exposed key weaknesses in its operating structure.

Exhibit 2 shows that furthermore, HTA has made limited progress implementing the measures included in the June 2020 Certified Fiscal Plan.

Exhibit 1: Budget to Actuals (as of April 30, 2021)

+ Favorable variances Revenue: Actual > Budget OpEx: Actual < Budget CapEx: Actual > Budget
- Non-favorable variances Revenue: Actual < Budget OpEx: Actual > Budget CapEx: Actual < Budget

April 30, 2021 - YTD				
Item	Budget (\$M)	Actual (\$M)	Var (\$M)	Var (%)
Toll fares	82	116	34	41
Toll fines	12	-	(12)	(100)
Transit revenue	20	1	(19)	(93)
Other income	4	5	0	10
Own revenue	118	122	4	4
CW capex funding	136	136	-	-
Federal funding	249	140	(109)	(44)
External funding	385	276	(109)	(28)
Total revenue	503	398	(105)	(21)
Payroll & PayGo	(67)	(68)	(0)	1
TU, ITS & Toll maintenance	(106)	(94)	12	(12)
Reserve & ROW payments	(106)	(18)	88	(83)
Other operating expenses	(25)	(18)	6	(26)
Total operating expenses	(304)	(198)	106	(35)
Federal Construction Program	(181)	(164)	16	(9)
Non-Federal Construction Program	(88)	(107)	(19)	22
Emergency Repair Program	(18)	(22)	(3)	18
Other capital expenses	(52)	(2)	50	(96)
Total capital expenses	(338)	(295)	43	(13)
Total expenses	(643)	(493)	150	(23)
Balance	(140)	(95)	45	(32)

Exhibit 2: Implementation status of Fiscal Measures from the June 2020 Certified Fiscal Plan

		Fiscal impact not expected in FY20	Fiscal impact* \$M	
			FY21 YTD Target	FY21 YTD Actuals
Fiscal measure		Description		
FUNDING	1 Recruit a new Board of Directors	Recruit a new Board of Directors, with distinguished professionals from the private sector, thus promoting the independence of the Authority from political interference	-	-
	2 Adopt organizational KPIs	Adopt a set of metrics that will be used to ensure that capital delivery happens on time and in line with best practices from other US states.	-	-
INCREASE REVENUE	3 Fare increases	Increase toll fares in line with inflation and optimize fare collection through a new electronic tolling system	5.8	-
	4 Fine increases	Increase toll fines in line with inflation, introduce a tiered fine payment system and optimize fine collection through a new electronic tolling system	2.2	-
	5 Collect discretionary funds	Collect more discretionary funds in order to execute projects that would further expand the capacity of the island's transport infrastructure	-	-
	6 Expand transit revenue	Expand transit revenues through the integration of TU with other transport networks and other initiatives (e.g., Transit Oriented Development)	0.2	-
	7 Optimize toll collection	Optimize toll fare collection and fine collection through the introduction of new roadside equipment and a new vendor	12.2	-
	8 Implement bi directional tolling	Reduce revenue leakage through the implementation of bi-directional tolling	N/A	N/A
	9 Improve ancillary revenue	Improve ancillary revenues through activities other than asset sales (e.g., advertising, rentals)	-	-
EXPENSES	10 Optimize capital expenses	Optimize capital expenses in a way that pushes HTA to be as efficient as other state transportation agencies	12.1	-
	11 Reduce pensions	Reduce pension costs in line with the targets laid out by the Commonwealth	N/A	N/A
MANAGE CONGESTION	12 Reduce healthcare cost	Reduce costs of healthcare insurance while also maintaining a high level of benefits for covered employees	-	-
	13 Eliminate Xmas bonus	Eliminate the Christmas bonus of HTA employees	-	-
	14 Reassess contracts	Reassess the operating contract of Tren Urbano in order to bring the costs of TU closer to the costs of its North American peers	N/A	N/A
	15 Manage congestion	Introduce new congestion management mechanisms (e.g., Dynamic Toll Lanes, Bus Rapid Transit, Traffic Signal Optimization)	1.7	-
EXPLORE CONCESSIONS & IMPLEMENT REFORMS	16 Explore concessions & implement reforms	Explore concession opportunities and implement TSR reforms to enable the Authority to develop the infrastructure of the island and improve management of the sector	-	-
Total			N/A	-

HTA made notable progress in the delivery of its federal capital program, which will continue to accelerate to address years of underinvestment.

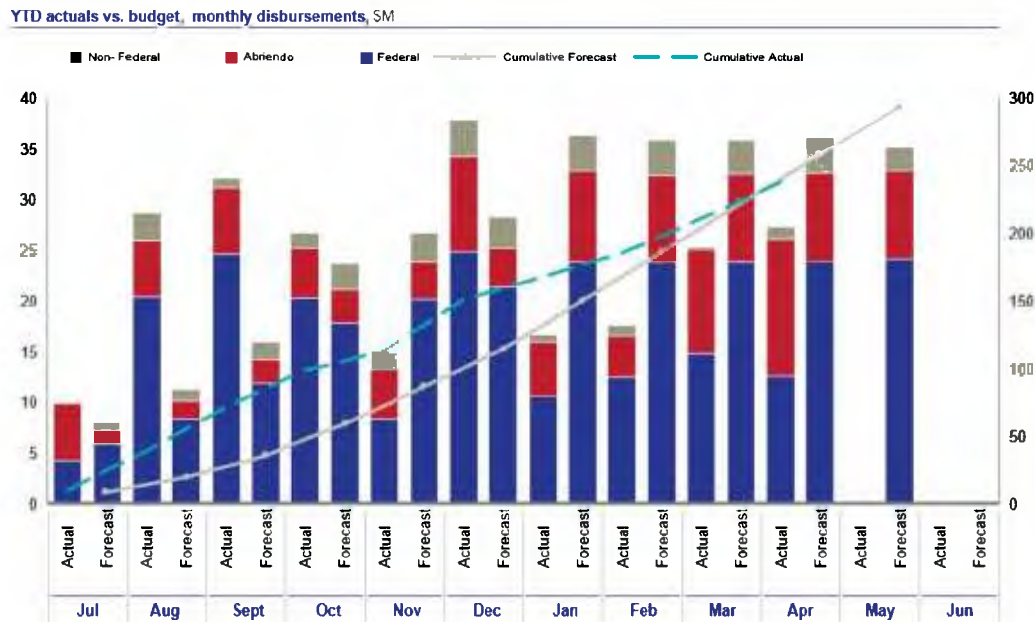
HTA continued positive improvement of the capital program results in FY21, including managing through the disruptions associated with COVID-19 (see Exhibit 3). Despite the pandemic, HTA delivered 87% of planned capital project disbursements (\$295 million) for FY21, as of April 2021. The overall performance compares favorably to 51% of actual disbursements in FY20 (\$269 million) and 29% of planned disbursements (\$175 million) in FY19.

Of concern, however, are the continued delays in Emergency Repair (“ER”) projects, most of which relate to post-Maria recovery work and remain delayed nearly four years post hurricane. Nearly four years after Hurricane Maria, approximately \$265 million in Federal Highway Administration (FHWA)-allocated recovery funds have yet to be disbursed. Recent agreement with Eastern Federal Lands Highway Division (EFLHD) creates a partnership for EFLHD to assume responsibility for the disbursement of approximately \$242 million of these funds; however, these have not yet been deployed to the benefit of the system and citizens.⁵ The ER program, which is nearly fully funded by FHWA and the Federal Transit Administration (FTA),⁶ has been delayed due to the difficulties HTA and their consultants have experienced in completing and delivering the final designs, environmental permitting, utility coordination, and right of way (ROW) acquisition to Eastern Federal Lands Highway Division (EFLHD). These issues combined with the magnitude of the size of the program have prevented the projects from moving forward at a steady pace.

⁵ See Exhibit 8 and Chapter 3 for additional details.

⁶ \$778M of the \$783M, or 99%, of the ER program is funded by FHWA (78% of program funding) and FTA (21% of total ER program funding) due largely to a congressional waiver of ER match requirements in 2018.

Exhibit 3: Capital Disbursements (as of April 30, 2021)⁷



This Fiscal Plan provides a roadmap for HTA to bring its network to a State of Good Repair, establish fiscal sustainability, support broader transportation sector reform, and secure better outcomes for all Puerto Ricans.

The 2021 Fiscal Plan empowers HTA to execute a \$11.9 billion capital investment program⁸ in FY22-51, prioritizing restoration of the system to a “State of Good Repair” (SOGR) and supporting the pursuit of discretionary projects to enhance capacity in strategic corridors to manage congestion and promote economic development (e.g., the completion of Puerto Rico’s strategic highway network). This capital program represents, at times, more than three times the average size of the program during the period of FY14-18, with the potential for historic levels of investment across FY22-26 given potential discretionary projects and federal funds. Executing on this plan will therefore require a step-change in performance. Changes in HTA’s governance and operating practices, including managerial improvements in capital project delivery outlined in its Memorandum of Understanding (MOU) with the Federal Highway Administration (FHWA), will be critical to enable it to improve the system safely and sustainably.⁹

Central to executing this roadmap will be the implementation of a set of reforms and fiscal measures that will improve HTA’s organizational capacity, fiscal responsibility, and operational sustainability.

⁷ CapEx disbursement figures are based on a modified accrual basis and may differ from accrual numbers reported in HTA’s budget to actuals reporting.

⁸ Including \$0.8 billion in transit and toll optimization. Excluding these, the Fiscal Plan calls for \$11.1 billion in highway-related capital expenditures

⁹ See section 2.3 for an overview of HTA’s relationship with FHWA, and section 2.4 for details on FHWA’s MOU with HTA

These sector reforms and fiscal measures remain critical to enable HTA to have a sustainable future. HTA currently is approximately \$6.6 billion in debt. Since HTA entered Title III in May 2017, HTA has had insufficient cash flows to service its outstanding debt and has not made payments since July 2017. Based on the Fiscal Plan projections on cash flow, the existing HTA debt service will require significant restructuring and HTA's full commitment to delivering results across the following areas:

- **Implementing transportation sector reform:** By participating in the transfer of its relevant assets (along with relevant funds, technical capacity and grantee status) to new or existing mode specific entities; implementing the multi-modal plans put in place by the new Transportation Planning Board; improving cooperation with private sector partners, and increasing its funding envelope, HTA must begin to address the root challenges of the transportation sector in Puerto Rico.
- **Achieving the full financial benefit of priority fiscal measures:**
 - **Increase revenues to support fiscal responsibility:** The 2021 Fiscal Plan requires HTA to ensure the funding of essential public services by enhancing operating revenues across toll fares, toll fines and the transit system by adopting modest and sustainable increases in prices. Toll fares require increases and bi-directional tolling implementation to keep up with growing costs and investment requirements; an enhanced toll fine structure must reward early payment; and a series of transit enhancements must increase revenue for Tren Urbano, which only receives 7 cents for every dollar it costs to operate. Finally, the 2021 Fiscal Plan requires HTA to pursue discretionary federal funding for transportation infrastructure improvements in Puerto Rico.
 - **Optimize operational expenses:** The 2021 Fiscal Plan requires HTA to explore re-bidding certain existing contracts to achieve more favorable terms and evaluate additional concession opportunities to enable the achievement of fiscal targets. Finally, the Fiscal Plan requires HTA to restructure its medical benefits plan and comply with the reform of the Commonwealth employee retirement system. These reforms allow HTA to achieve fiscal responsibility, continued access to reasonable medical benefits, and the long-term sustainability of its retirement system.
 - **Execute an ambitious capital program to restore the system's condition and performance:** The 2021 Fiscal Plan requires HTA to prioritize SOGR projects to improve the condition of the system, improve capital project delivery, and optimize capital expenditures necessary to promote economic growth. The 2021 Fiscal Plan also supports additional investment in strategic projects to promote economic development should federal, discretionary funds be made available to HTA. The proposed capital program increases annual disbursements from \$212M, on average, in FY13-FY18, to approximately \$397 million in SOGR investments from FY22-FY51, with potential for an additional \$2.8 billion in investments for strategic projects if federal funds are available. These disbursements include annual federal, non-federal, and local total construction

cost projections, and represent a potentially historic level of investment. A step-change in the ability to manage the capital program across regular and emergency repair construction projects, while pursuing strategic projects, will be critical to accomplishing a capital plan of this scope and size.

- **Adjust the Authority's debts through Title III:** HTA entered its Title III case with approximately \$6.6 billion in debt. Although HTA should start generating annual operational surpluses when the fiscal measures in this plan are implemented, HTA will still generate an aggregate net deficit of approximately \$466 million over the next 30 years, pre-CW operating transfer. Its existing debt burden is therefore unsustainable and will need to be substantially reduced through a Title III plan of adjustment.

Taken together, the transportation sector reform and fiscal measures, combined with potentially unprecedented levels of federal discretionary funding, present a generational opportunity to create a new transportation sector in Puerto Rico. This sector could unlock economic development while promoting a safer, more sustainable, and more equitable future, for all Puerto Ricans.

PART II – DESCRIPTION OF HTA

CHAPTER 1: HTA MISSION, HISTORY & VISION

1.1) HTA's Mission and Vision

HTA is a public corporation and government instrumentality of the Commonwealth of Puerto Rico, under the oversight of Puerto Rico's Department of Transportation and Public Works (DTOP, by its Spanish acronym). HTA is responsible for the operation of toll roads and the construction of roads, highways, and related transportation facilities in Puerto Rico. Furthermore, HTA is responsible for San Juan's metro system, Tren Urbano, as well as its network of feeder buses.

HTA aims to facilitate movement of vehicles and individuals; ensure access to highways in good condition; alleviate the dangers and inconveniences of traffic congestion; improve the safety of the Commonwealth's highways; and address Puerto Rico's demand for improved transportation infrastructure. HTA strives to develop an integrated transportation system that promotes Puerto Rico's economic development in harmony with the environment.

HTA's mission is to support the economic development of Puerto Rico through an integrated transportation network, prioritizing safety, environmental responsibility, and excellent service delivery focusing on:

1. **Safety:** Promote the safe and easy movement of vehicles and individuals.
2. **State of Good Repair:** Reach and maintain SOGR to ensure the people of Puerto Rico have access to quality roads and modes of transportation.
3. **Economic Development:** Contribute to the development of Puerto Rico.
4. **Resilience:** Build a strong, resilient road network by strengthening assets that are prone to natural disasters.

HTA seeks to accomplish its mission through the following actions:

1. Plan and execute construction projects on Puerto Rico's highways;
2. Identify and implement strategies for addressing demand for improved transit and transportation facilities;
3. Contribute to the development and implementation of Puerto Rico's transportation plan and sector reforms;
4. Determine, impose, adjust, and collect tolls;
5. Promote the development of the transit system and surrounding areas.¹⁰

¹⁰ Article 2 and 4, Act No. 74 of June 23, 1965, as amended, known as the "Puerto Rico Highways and Transportation Authority Enabling Act"

1.2) History and Responsibilities of HTA

HTA was created by Act 74 of June 1965 to build Puerto Rico's highway network (the local equivalent of both US routes and Interstate), part of the system developed in the continental United States during the 1950s and 1960s. It has since evolved to adopt responsibilities beyond serving as the agency responsible for the construction of the state system and management of the toll roads. In 1990, through Act 4, HTA was designated to implement Public-Private Partnership (P3) contracts for the construction, operations, and maintenance of highway, bridges, avenues, and other traffic installations. In this capacity, HTA completed the Teodoro Moscoso Bridge in 1994, the first P3 under U.S. jurisdiction. In 1991, under Act 1, the old Highway Authority became HTA, an integrated transportation authority that is now the principal promoter and developer of transportation on the Island. Though HTA originally was created to manage the toll network, HTA has grown to manage the highway network, Tren Urbano transit system, and feeder bus system. Today, HTA both constructs new roads and maintains its existing network of toll and non-toll roads and also supports other public entities (e.g., municipalities) with the management of federal construction grants and the delivery of capital projects. In the future, these responsibilities will shift as the transportation reforms, described further in Chapter 17, are implemented.

1.3) HTA's Transportation Network

Puerto Rico's Road system consists of 11,653 non-municipal lane-miles of roads, of which 10,556 lane-miles are owned by DTOP and 1,097 lane-miles are owned by HTA (see Exhibit 4).¹¹ HTA-owned roads include 9.4% of state lane miles, which transport 24.8% of the state roads' demand. Administrative responsibilities for construction and maintenance of roads are not allocated based on ownership, however: HTA is responsible for the operations and maintenance of 6.5% of highway lane-mileage, yet is responsible for construction on 97% of highway lane-mileage, managing construction on behalf of DTOP for many roads (see Exhibit 5).¹²

Exhibit 4: Toll and Non-Toll Road Mileage in Puerto Rico

Toll roads vs. Non toll roads in Miles						
	Sum of length	Sum of % length	Sum of Lane Miles	Sum of % Lane Miles	Sum of VMT	Sum of % VMT
Non toll road	4,654.3	95.2%	10,595.6	90.9%	36,088,503.4	77.0%
Toll road	236.4	4.8%	1,057.7	9.1%	10,772,645.6	23.0%
Total	4,890.7	100.0%	11,653.3	100.0%	46,861,149.0	100.0%

¹¹ Based on 2020 HPMS. The HPMS is a national level highway information system that includes data on the extent, condition, performance, use and operating characteristics of the nation's highways. The HPMS contains administrative and extent of system information on all public roads, while information on other characteristics is represented in HPMS as a mix of universe and sample data for arterial and collector functional systems. Limited information on travel and paved miles is included in summary form for the lowest functional systems. HTA collects data on 4,000 road segments on a continuous basis to comply with Federal regulations.

¹² Construction and major reconstruction of the state system and operations and maintenance of the toll roads was assigned to HTA by Act 74 of June 1965.

Exhibit 5: Construction Responsibility by Agency

Construction responsibility in Miles						
	Sum of length	Sum of % length	Sum of Lane Miles	Sum of % Lane Miles	Sum of VMT	Sum of % VMT
Abertis	1.3	0.0%	9.5	0.1%	89,330.8	0.2%
Metropistas	73.2	1.5%	344.4	3.0%	4,700,537.3	10.0%
HTA	4,816.2	98.5%	11,299.5	97.0%	42,071,280.9	89.8%
Total	4,890.7	100.0%	11,653.3	100.0%	46,861,149.0	100.0%

Exhibit 6: Operations and Maintenance Responsibility by Agency

Operations and maintenance responsibility in Miles						
	Sum of length	Sum of % length	Sum of Lane Miles	Sum of % Lane Miles	Sum of VMT	Sum of % VMT
Abertis	1.3	0.0%	9.5	0.1%	89,330.8	0.2%
DTOP	4,649.4	95.1%	10,546.8	90.5%	35,128,085.3	75.0%
Metropistas	73.2	1.5%	344.4	3.0%	4,700,537.3	10.0%
HTA	166.8	3.4%	752.7	6.5%	6,943,195.5	14.8%
Total	4,890.7	100.0%	11,653.3	100.0%	46,861,149.0	100.0%

HTA manages tolling facilities on four major roads on the island (PR-20, PR-52, PR-53, and PR-66). As of May 2021, two additional toll roads (PR-5 and PR-22) are managed and operated by Metropistas, a concessionaire. Part of HTA's transformation to a toll road authority includes supporting the Puerto Rico Public-Private Partnerships Authority ("P3A") in studying potential P3s of the remaining toll roads.

Exhibit 7: Map of Puerto Rico's highway system



In addition to road management, HTA also operates transit assets including Tren Urbano, San Juan's heavy rail system, and its associated feeder buses. Completed in 2004, Tren Urbano is the Caribbean's first urban rapid transit system. It consists of a single line of 10.7 miles with sixteen stations from Bayamón to Sagrado Corazón in downtown San

Juan.¹³ Most of the system is elevated with a 1.1-mile tunnel section in the Rio Piedras district.

HTA is one of three agencies that manage the operation of public transportation assets in the San Juan metropolitan area. The Puerto Rico Integrated Transit Authority (PRITA) operates the main bus network of San Juan, and Maritime Transport Authority (ATM) operates the ferry between Old San Juan and Cataño.

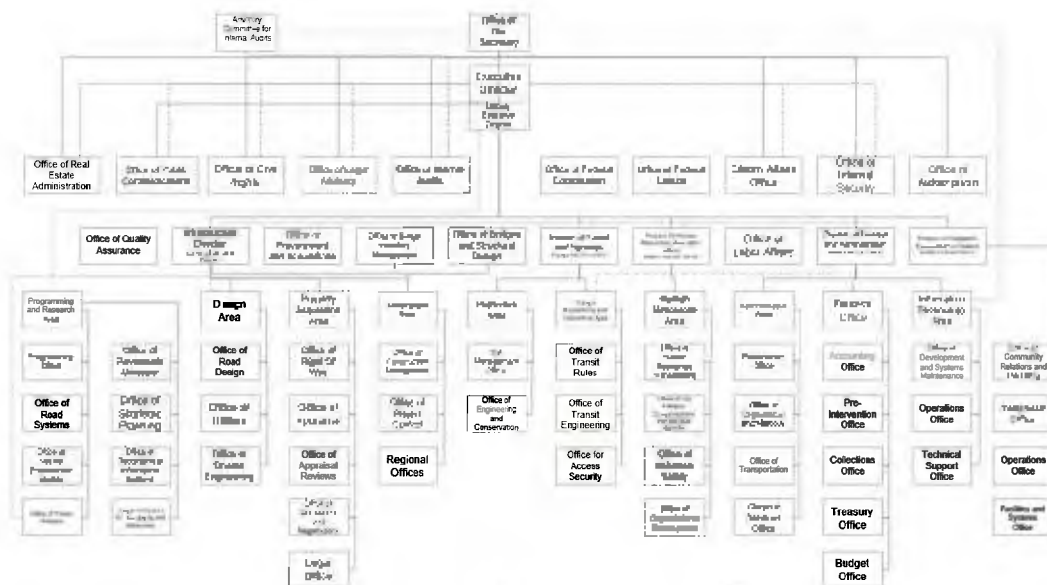
The management of multiple transportation assets and lack of asset-class specific ownership and responsibility contribute to lack of integration and coordinated planning by mode across the Island. HTA's mandate beyond the toll road management, creates potential overlap with other transportation agencies, one of the root cause drivers of lagging performance outcomes of the system that must be address through the broader transportation sector reform.

1.4) Governance and Organizational Structure

Current Organizational Structure

HTA is a government instrumentality overseen by DTOP, and the HTA Executive Director reports to the Secretary of DTOP and HTA's Board of Directors. The Authority is led from the Office of the Executive Director and currently follows the organizational structure shown in Exhibit 8.

Exhibit 8: Current Organizational Structure of HTA



¹³ US General Accounting Office, Review of the Tren Urbano Finance Plan, p. 1 (Tren Urbano was initially estimated to cost ~\$1.25B) / FHWA, Project Profile: Tren Urbano, Found online at: https://www.fhwa.dot.gov/ipd/project_profiles/pr_tren_urbano.aspx (Tren Urbano ended up costing ~\$2.25B).

HTA has a Board of Directors, which guides HTA's overall strategy and aids in priority-setting. HTA's Board is composed of the DTOP Secretary, the President of the Puerto Rico Planning Board, the Executive Director of the Fiscal Agency and Financial Advisory Authority (AAFAF), and the Treasury Secretary. Three remaining positions, intended to be filled by industry professionals, are currently vacant. Board members currently serve terms of unlimited duration. Chapter 9 provides further details on how this Board might be optimized.

In January 2018, HTA had 1,283 employees. Since then, 373 employees enrolled in one of the three phases of the voluntary transition program (VTP), while HTA witnessed a net attrition of 70 employees. Currently, HTA has 840 employees distributed across 16 administrative areas (which are distinct from the fields in the organizational hierarchy).¹⁴ Below is the breakdown of the Authority's employees by area:

Exhibit 9: Current HTA personnel by division (as of February 28, 2021)

Division	Number of employees	Division	Number of employees
	11		1
	75		8
	25		38
	20		5
	22		28
	375		94
	49		11

1.5) Key Performance Indicators (KPIs)

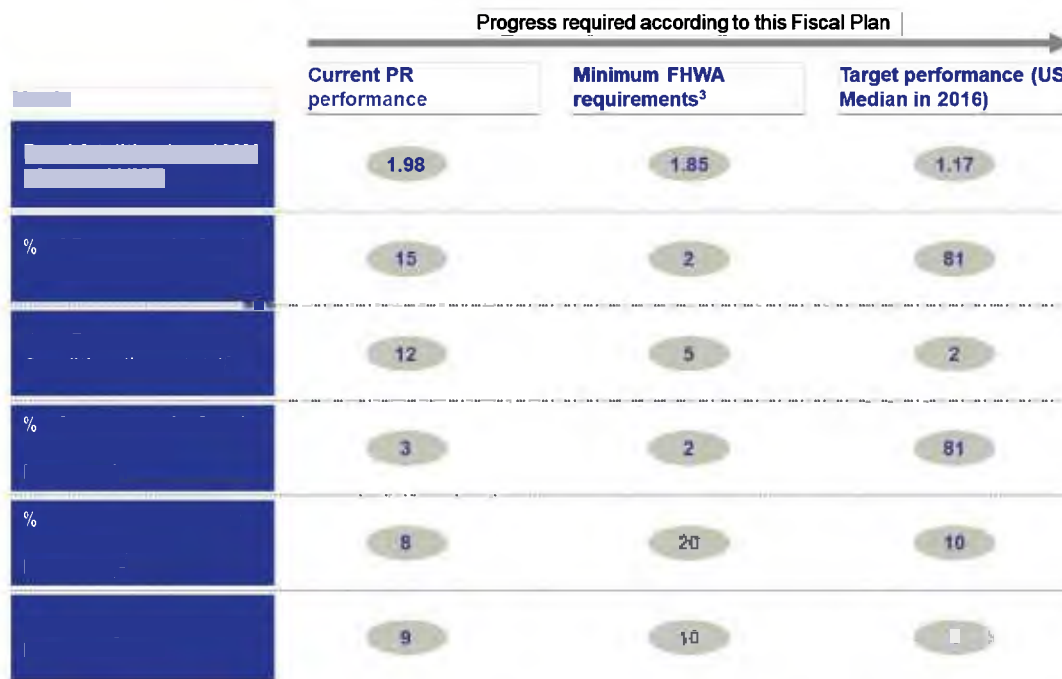
Improving the safety, condition, and performance of the transportation system are central to HTA's mission as a transportation authority. Delivery on the capital program, in particular reaching and maintaining a SOGR¹⁵ for the road network, is a strategic priority.

¹⁴ Employee data comes from HTA's payroll file as of February 28, 2021. Classification of administrative areas does not fully match divisions in HTA org chart due to ongoing organizational changes that HTA has to undertake as part of its MOU with FHWA.

¹⁵ The exact definition of the term is left to the discretion of State DOTs. However, FHWA has defined SOGR in the context of exercises. This definition is the following: 97% of Interstate pavement in Good or Fair Condition, 85% of Non-Interstate National Highway System (NHS) pavement in Good or Fair Condition and 75% of Non-Interstate Non-NHS pavement in Good or Fair Condition. Good Condition is, in turn, defined as having an International Roughness Index (IRI) score of less than 95 and Fair Condition is defined as having an IRI score of less than 120. FHWA exercise found online at: <https://www.fhwa.dot.gov/asset/guidance/hif10006.pdf>

By most metrics, HTA lags behind its mainland peers and must make substantial improvements in performance across the board, rather than modest incremental improvements in selected areas. For example, fatalities remain two times the level of mainland peers; the share of the network in good condition is one fourth of the share of peers; and San Juan remains among the most congested metros in North America. Radical improvements are paramount in these performance metrics, highlighted in Exhibit 10, and include HTA's ability to deliver on strategic priorities in the capital program.

Exhibit 10: Puerto Rico's performance against KPIs



¹ Good Condition: International Roughness Index (IRI) of less than 95 / ² Poor Condition: IRI of more than 170 / ³ As featured in the FY19 Certified FP

Lagging performance not only impacts everyday citizens of Puerto Rico by adversely affecting the transportation network's ability to efficiently move goods and people, it creates risks such as lack of federal funding compliance. HTA is expected to continue progress towards achieving target performance across these metrics. Failure to meet FHWA requirements results in financial penalties imposed by FHWA, which can then impact capital program investments. HTA has been in violation of FHWA requirements for interstate pavement condition over the last two years, but its continued investments will further its ability to bring the network to SOGR.

To improve delivery of these metrics, this Fiscal Plan establishes a set of project-specific capital delivery KPIs (see Part V). To closely track these KPIs, HTA must submit an annual report every May to the FOMB, describing its past progress and laying out its targets for the upcoming year across the metrics laid out above, as was specified in the 2020 Fiscal Plan. Additional reporting requirements are further described in Appendix A of this Plan.

1.6) The Future of HTA & Puerto Rico's Transportation Sector

The transportation sector's continued underperformance across a range of outcomes underscores the importance of transformation of HTA and the rest of the transportation sector. Transformation of this scale is both possible andprecedented.¹⁶ HTA must improve and transform transportation outcomes for residents of Puerto Rico by meeting or exceeding fiscal measures and supporting the Commonwealth-wide transportation sector reforms. In a 205(a) letter dated January 29, 2021, further detailed in the Commonwealth 2021 Certified Fiscal Plan, a series of reforms for HTA and other transportation agencies were recommended with the potential to dramatically impact the economic growth trajectory and day-to-day lives of Puerto Ricans. These reforms are adopted in this Fiscal Plan. They should bring equity, cohesion, and quality to the transportation sector by addressing three key challenges faced by Puerto Rico's transportation sector:

1. Overlapping asset ownership, operation, responsibilities and budget allocation;
2. Poor performance management; and
3. Lack of a holistic federal funding strategy.

For HTA, these reforms would primarily involve the following solutions to address each of the challenges above:

1. Overlapping assets

- a. Non-toll road assets, including responsibilities, employees, budgets, and grants, would be transferred into transit agencies, after which the toll road and non-toll road authorities would focus on management of their respective roads. Per the Commonwealth Plan, HTA may become the toll road entity; however, HTA may alternatively concession toll roads and manage the road network system.

2. Performance management

- a. HTA must establish an independent Board of Directors with three external experts to ensure long-term, objective and apolitical governance of the Agency.
- b. HTA must adopt its proposed prioritization framework to select for projects that improve HTA's progress towards achieving SOGR per the aligned KPIs.
- c. HTA must pursue contract negotiation opportunities and P3s to strengthen HTA's delivery and performance.

3. Federal funding strategy

¹⁶ Across the US and Latin America, there are multiple examples of successful transportation reforms that have yielded substantial improvement of transportation outcomes. Bogotá, for example, successfully integrated an industry of private bus operators into a new large-scale Bus Rapid Transit ("BRT") network, TransMilenio, in the early 2000s. TransMilenio led to a 32% reduction in travel times, 92% decrease in road deaths, and 40% reduction in some air pollutants.¹⁶ In 2002, the State of Florida transformed its transportation department by combining all toll roads under a single entity and seeking private sector funding and support for many of its operational functions. Since 2013, the Florida Department of Transportation has seen a 5.8% compounded annual growth rate in toll revenues, with 2019 toll revenues of \$932 million, up from \$663 million in 2013.¹⁶ In 1995, Virginia passed legislation to create its public-private partnership ("PPP") office, which has catalyzed at least \$10.2 billion of transportation investment since its inception—the highest in the US.

- a. HTA must implement a discretionary grants management team and grant acquisition strategy to maximize the federal funding available to HTA for discretionary projects once HTA fulfills its goals to achieve SOGR.

These reforms will allow HTA to focus its efforts on exclusively managing and operating its toll roads. Furthermore, through these reforms, HTA will have the opportunity to improve its processes through improved project management, increased discretionary funding, and coordinated integration with other transportation agency services. Further detail on the actions HTA must take to prepare for and implement these reforms is provided in Part V and the details of the future vision for the sector are provided in Chapter 17.

The 2021 Fiscal Plan calls for the completion of the transfer of transit assets from HTA to PRITA and the commencement of a process to analyze, plan and transition the ownership and responsibility of assets between toll and non-toll authorities, modifying its scope of responsibilities to focus on construction, operation and maintenance of the toll road network.

Future Vision of Organizational Transformation for HTA

Underscoring the importance of the first challenge listed above, HTA's current organizational structure spans the management and operation of multiple asset classes: toll roads, non-toll roads, the transit system, and the feeder bus system. The future-state vision of the Authority, based on the execution of the reforms provided in the 205(a) letter of January 29 and the 2021 Commonwealth Certified Fiscal Plan, plans for HTA to transfer responsibility and ownership of transit and non-toll assets to focus on its role as a toll authority.

The future state of HTA requires in-depth mapping of current personnel to each asset. This will allow HTA to ensure that the future vision of asset ownership can be completed while maintaining the organizational efficiency of each asset and the Authority.

As a first step towards an efficient and effective future state, HTA must develop a view of its current personnel mapped to the specific assets their roles serve. This analysis will provide HTA with the ability plan more accurately for the impact of asset transfers on both HTA and other agencies, as highlighted in the implementation plans for both the organizational enhancement fiscal measures (see Chapter 9) and the transportation sector reform (see Chapter 17).

CHAPTER 2: RELATIONSHIP WITH COMMONWEALTH, FOMB, FHWA, FTA AND EFL

2.1) Relationship of HTA with the Commonwealth

Due to its role delivering transportation infrastructure projects, HTA has historically received significant fiscal support from the Commonwealth. Before 2015, HTA received appropriations of revenues from the cigarette tax, gasoline tax, diesel tax, petroleum tax, vehicle license fees collected by the Commonwealth. In 2015, the sitting Governor issued Executive Order 2015-046, pursuant to which the Commonwealth began retaining these revenues. To ensure HTA had enough resources to fund necessary maintenance and capital expenditures to keep Puerto Rico's transportation system operational, the Commonwealth started making two new, main appropriations: a) a capital expenditure appropriation, designed to help HTA advance its infrastructure priorities; and b) a general unrestricted transfer, intended to be used by HTA solely to fund costs associated to non-toll assets. Per the Commonwealth Certified Fiscal Plan, the funding from the unrestricted transfer is not available to be used for any other purposes, including funding costs and projects above and beyond SOGR projects and existing measures.

Furthermore, consistent with Section 5.2.6 of the Commonwealth Certified Fiscal Plan, the operating transfer covers the full cost of non-toll assets, marking the first step towards the implementation of the transportation sector reforms outlined in Chapter 17. The appropriation does not include funding for the HTA emergency reserve, nor does it draw down existing balances. The transfer also assumes toll roads have access to federal and state capital funds until reorganization is complete, but not thereafter. As a result, over FY22-FY51, the 2021 Commonwealth Certified Fiscal Plan includes an average annual operating appropriation of ~\$109 million and average capital appropriation of \$67 million per year. The HTA operating transfer is intended to be used by HTA solely to fund costs associated to non-toll assets and is not available to be used for any other purposes. The existence of these appropriations is subject to revision, in line with the broader priorities of the Commonwealth. The Commonwealth is unable to fund larger or additional appropriations to HTA (or re-establish appropriations of the retained tax revenues discussed above) given its own fiscal challenges, as set forth in the Commonwealth's Certified Fiscal Plan.

2.2) Relationship of HTA with the Financial Oversight and Management Board (FOMB)

In 2016, the US Congress enacted the Puerto Rico Oversight, Management, and Economic Stability Act ("PROMESA") to address a fiscal emergency in Puerto Rico. In enacting PROMESA, Congress found, among other things:

- A combination of severe economic decline, and, at times, accumulated operating deficits, lack of financial transparency, management inefficiencies, and excessive borrowing has created a fiscal emergency in Puerto Rico.
- As a result of its fiscal emergency, the Government of Puerto Rico has been unable to provide its citizens with effective services.

- The current fiscal emergency has also affected the long-term economic stability of Puerto Rico by contributing to the accelerated outmigration of residents and businesses.
- A comprehensive approach to fiscal, management, and structural problems and adjustments that exempts no part of the Government of Puerto Rico is necessary, involving independent oversight and a federal statutory authority of the Government of Puerto Rico.

Accordingly, PROMESA provided for the creation of the Oversight Board, which provides oversight to the Authority so that it will achieve fiscal responsibility and access to the capital markets. In May 2017, the FOMB filed a petition for relief under Title III of PROMESA in accordance with the requirements of section 302 of PROMESA for the purpose of adjusting its debts. The FOMB has determined that a successful restructuring of HTA's debts under a plan of adjustment and the viability of HTA going forward in accordance with the mandates of PROMESA will require HTA to undertake a series of initiatives (e.g., revenue enhancements, cost savings) that promote its fiscal responsibility, enhance quality of life, and promote economic growth through a reliable and accessible transportation system with professional and transparent governance. These initiatives are outlined as fiscal measures in HTA's Fiscal Plan, which is updated at the end of every Fiscal Year. These updates, including the updates reflected in this Fiscal Plan, reflect new macroeconomic, policy, and technological developments and are certified by the FOMB after appropriate revisions are incorporated. The FOMB is responsible for monitoring progress of this Fiscal Plan by reviewing a series of reports that are submitted by HTA. The FOMB is also responsible for helping improve HTA's contract management practices through its contract review policy established in accordance with section 204(b)(2) of PROMESA. The FOMB reviews contracts with third parties, ensuring they promote market competition and are consistent with the Certified Fiscal Plan and Certified Budget.

2.3) Overview of Relationship with Federal Highways Administration

To fulfill its responsibilities as a transportation authority, HTA works closely with the FHWA. HTA receives an annual allocation of approximately \$139 million after penalties from FHWA to execute capital projects.¹⁷ This allocation is included in federal legislation and occasionally new funding is made available to allow HTA to execute other capital projects including Emergency Relief (ER) projects. The Federal-Aid Highway Programs (FAHP) is currently the primary source of funding for construction of Puerto Rico highways, roads, bridges, and streets. The FAHP is funded from the transportation user-related revenues deposited in the Federal Highway Trust Fund, primarily federal excise taxes on motor fuels along with excise taxes on tires, trucks and trailers and truck-use taxes.

The Federal-Aid Highway Program (FAHP) is a reimbursement program administered by HTA and assisted by FHWA. FHWA's relation with HTA is described in a "Stewardship

¹⁷ The allocation is a \$158M allocation, but the amount is reduced to \$139M by about \$20M in regulatory penalties imposed on Puerto Rico. <https://www.fhwa.dot.gov/fastact/factsheets/territorialprhighwaysfs.cfm>

and Oversight Agreement.”¹⁸ FHWA supports HTA to carry out highway construction when HTA’s resources are limited due to unforeseen circumstances. For example, in the aftermath of Hurricane Maria, the Eastern Federal Lands Highway Division (“EFLHD”) of FHWA executed two memoranda of agreement (MOAs) with HTA and FHWA Puerto Rico/US Virgin Islands (“USVI”) Division to support HTA with the delivery of the ER program and accelerate the recovery of the Island. An overview of the MOAs is included in Appendix B. The first MOA, titled “Construction Engineering and Inspection Services for Highway and Bridge Projects,” is for EFLHD to assist HTA in monitoring construction contractor performance and ensuring proper construction standards are adhered on HTA delivered construction ER program emergency contracts. EFLHD employees and consultants made recommendations to HTA regarding the suitability of completed work and contractor compliance with contracts. The second MOA, titled “Engineering and Construction Services for Bridge, Traffic Signage and Safety Improvements, and Landslide Projects”,¹⁹ is for EFLHD to provide preliminary engineering, procurement, and construction engineering services of ER program permanent work for improvements related to damages caused by Hurricane Maria. The projects have been delayed due to the difficulties HTA and their consultants have experienced in completing and delivering the final designs, environmental permitting, utility coordination, and ROW acquisition to EFLHD. These issues combined with the magnitude of the size of the program have prevented the projects from moving forward at a steady pace.

In terms of spend, of the \$503 million in hurricane relief funding allocated by FHWA, \$242 million has been transferred to EFLHD. Of the remaining \$261 million in hurricane relief funding made available to HTA, 91% has been disbursed by HTA to date.

Exhibit 11: FHWA-allocated ER funding

FHWA Funds as of April 30, 2021

Emergency addressed	Status, \$M			
	Allocated Funds by FHWA	Transferred to EFL	Obligated to date	Available to HTA for obligation
Hurricanes Irma and Maria	502.8	241.8	237.5	23.5
2018 Tidal Waves	1.8	-	-	1.8
2019 Heavy Rain Event	5.5	-	5.0	0.5
2019 Karen Tropical Storm	2.9	-	0.2	2.7
January 2020 Earthquakes	14.0	-	13.1	0.9
Total	526.9	241.8	255.8	29.3

FHWA and the US Department of Transportation (USDOT) also administer stimulus and discretionary grant programs, for which HTA is eligible. Funding includes the CARES Act, from which HTA expects two sums of \$12 million each.

¹⁸ <https://www.fhwa.dot.gov/Federalaid/stewardship/?CFID=164387233&CFTOKEN=7a4229de2767206b-9AFB817D-9DEB-10B1-9DDF1DD10B7433D1>

¹⁹ <https://www.fhwa.dot.gov/prdiv/moa.cfm>

2.4) Memorandum of Understanding with Federal Highways Authority and Key Performance Indicators

Memorandum of Understanding with Federal Highways Authority

To maintain its eligibility for designated Federal highway construction funding, the Governor of Puerto Rico signed a Memorandum of Understanding (MOU) with FHWA on February 29, 2016. The purpose of the MOU is to facilitate improvements to HTA's federal-aid billing procedure and enable HTA's ability to be suitably equipped and organized to meet federal requirements, and to expedite project delivery. The MOU was required to maintain eligibility for designated federal highway construction funding in the face of persistent performance challenges, including a growing backlog of inactive obligations and unexpended balances.²⁰ This MOU specifies that HTA must undertake a series of improvements in the following areas:

- **Federal Billing Procedures:** The MOU requires HTA to pay contractors with Electronic Funds Transfers (EFT) no more than 40 days after HTA receives their invoices. HTA must also track the status of payments in an electronic method that is acceptable and accessible to FHWA. In May 2016, HTA established a procedure to pay contractors with EFTs. HTA Contractors report that payments have improved. Some progress has been made to accelerate payments in line with the requirements of the MOU, but the necessary cadence has not been met nor has HTA established a robust transparent tracking tool with automatic audit trails capabilities as required.
- **Toll Credits:** The MOU requires FHWA to identify the amount of toll credits available for HTA use and ensure its toll credit balance is in compliance with current FHWA guidance. The MOU also requires HTA to modify its processes for approving, tracking and reconciling toll credit usage. In October 2016, FHWA validated HTA compliance with federal guidance and conditionally approved HTA's SOP for the tracking and reconciliation toll credit usage until an automated system (i.e., PMIS which is currently in project testing phase) is implemented. HTA claims Toll Credit tracking will be improved with implementation of its new Project Management Information System (PMIS).
- **Organizational Capacity:** The MOU requires HTA to develop a Request for Proposal (RFP) to procure a management consultant. The management consultant would help the Authority become a more efficient organization by improving its systems, procedures, organizational structure and bylaws. The MOU requires: (1) the selected consultant to prepare a recommendation report; and (2) HTA to submit the report to FHWA along with an implementation schedule for the accepted consultant's recommendation. The MOU also requires HTA to implement the recommendation in accordance with the established schedule. In March 2019, HTA submitted the implementation schedule to FHWA. The implementation of the accepted consultant's recommendations is expected to continue into FY23.

²⁰ As of March 2021, FHWA reported that HTA has 51% of inactive obligations while the national average is 1.5%, and that HTA has ~\$638M in unexpended balances, of which \$119M are ER funds.

- **Project Delivery:** The MOU requires HTA to identify the reasons behind delays in obligated projects and submit a schedule of milestones that would accelerate federal aid allocations. The MOU also requires HTA to improve email communications, electronic project monitoring, and financial billing. As of May 2020, HTA has fulfilled the requirements to accelerate project obligations. The Authority has installed a new email communication system and improved its information systems, including an upgrade to a series of modules related to Human Resources, Inventory, and Contract Management. HTA has not finished the renovation of its project management information system, which is expected to be completed in early FY22. This is particularly critical as HTA expends unexpended balances and seeks to deliver full disbursement expectations in the future.²¹

So as to not jeopardize FHWA funding, HTA must take all steps necessary to build upon the progress it has already made. All of the requirements of the MOU must be completed according to the timelines established by FHWA without further delay. Given that the implementation of the MOU is critical for the continuation of HTA's status as a federal grantee and for the uninterrupted development of infrastructure in Puerto Rico, it will be monitored on a monthly basis by the FOMB. Furthermore, HTA must fulfill the FHWA reporting requirements (Exhibit 7) to maintain and achieve SOGR. The status of these metrics and HTA's performance is outlined further in Chapter 4.

Exhibit 12: FHWA reporting requirements

Measure area	Performance measures	FHWA reporting cadence	FOMB reporting cadence
PM1: Safety	<ul style="list-style-type: none"> Number of fatalities / serious injuries Fatalities / serious injuries per million vehicle miles traveled Number of non-motorized fatalities and non-motorized serious injuries 	<ul style="list-style-type: none"> Annual HSIP reporting with: <ul style="list-style-type: none"> Targets and how they support SHSP¹ Outcomes 	<ul style="list-style-type: none"> Annual
PM2: Pavement Condition	<ul style="list-style-type: none"> Percentage of pavements of the Interstate System in Good/Poor condition Percentage of pavements of the non-Interstate NHS in Good/Poor condition 	<ul style="list-style-type: none"> Annual, 4 year perf. period <ul style="list-style-type: none"> Baseline Mid-period Full performance 	<ul style="list-style-type: none"> Biennial
PM2: Bridge Condition	<ul style="list-style-type: none"> Percentage of pavements of the NHS System in Good/Poor condition 	<ul style="list-style-type: none"> State and MPO reports USDOT report to congress 	
PM3: System Performance	<ul style="list-style-type: none"> Interstate/Non-Interstate Travel Time Reliability Measure: Percent of person-miles traveled on the Interstate that are reliable 	<ul style="list-style-type: none"> Biennial, 4 year perf. period <ul style="list-style-type: none"> Baseline Mid-period Full performance 	<ul style="list-style-type: none"> Biennial
PM3: Freight Movement	<ul style="list-style-type: none"> Freight Reliability Measure: Truck Travel Time Reliability (TTTR) Index 	<ul style="list-style-type: none"> State and MPO reports on performance USDOT report to congress 	
PM3: Traffic Congestion	<ul style="list-style-type: none"> Peak Hour Excessive Delay (PHED) Measure: Annual Hours of Peak Hour Excessive Delay (PHED) Per Capita Non-Single Occupancy Vehicle Travel (SOV) Measure: Percent of Non-Single Occupancy Vehicle (SOV) Travel 		

²¹ HTA has made progress in improving its rate of disbursements for regular capital expenditures, from 29% in FY19 to 87% YTD in FY21. Potential for improvement remains, however, in Emergency Relief expenditures: in 2016, HTA's unexpended balances were at \$460M with Emergency Relief funding. As of March 2021, HTA's unexpended balances are at \$638M.

2.5) Overview of Relationship with the Federal Transit Administration

Since its inception, HTA has assumed the ownership and operation of Tren Urbano (TU), San Juan's metro line. To support the operations of Tren Urbano, HTA receives an annual operational allocation of \$20 million from FTA. This amount is occasionally supplemented by one-off grants that help HTA perform capacity or efficiency improvements (e.g., installation of a new communications system) and transit-related ER projects (e.g., vehicle repair).

As HTA advances efforts to transfer ownership and operation of Tren Urbano to PRITA, per the reforms indicated in Chapter 12 of the Commonwealth Certified Fiscal Plan, the Authority will also need to ensure FTA grantee status is transferred as well as the relevant staff, capabilities, and expertise. Additional funding from the CARES Act and funding from the American Rescue Plan (ARP) can be expected to provide additional transit funding through the FTA. Chapter 17 provides more detail on these plans.

CHAPTER 3: IMPACT OF HURRICANE MARIA, EARTHQUAKES & COVID-19

3.1) Overview of impact of natural catastrophes

Since FY18, Puerto Rico has been hit by a series of unforeseen emergencies: the most destructive hurricanes that has passed through the Island in the past century; several earthquakes with a magnitude of more than 5; and a pandemic that has necessitated a practical shutdown of economic activity and dramatically reduced road utilization. These catastrophes have collectively affected the operating revenues and capital project delivery of HTA.

Exhibit 13: Sources of Emergency Funding

Federal and Local Emergency Relief Funds, FY22-FY49							
ER Funding Source, \$M	FY22	FY23	FY24	FY25	FY26	FY 22-26	FY 22-49
Federal ER Funds (FHWA)	53	70	60	26	7	216	216
Federal ER Funds (FEMA)	3	4	2	-	-	9	9
Local ER funds	6	6	4	4	4	24	24
Total Emergency Relief Funds	62	80	66	30	11	249	249

To address the impact of these catastrophes, HTA has received approximately \$129 million in emergency funding as of April 2021 and expects to receive an additional \$249 million in emergency funding from FY22 to FY26.

3.2) Impact of Hurricane Maria on HTA Activities

Puerto Rico's highways suffered significant damage following Hurricane Maria, prompting the issuance of 1,175 Detailed Damage Inspection Reports (DDIRs).²² Roads and bridges were damaged and several stations of Tren Urbano were rendered inoperable, causing Tren Urbano to stop running for a period of three months. HTA's operating revenues were also significantly affected. Fine collection, which had already been stagnating due to collections system deficiencies, was suspended due to the adverse impact of the hurricane on the electronic tolling system. Tren Urbano ridership also fell

²² DDIR forms are required to be submitted to the FHWA to determine if the event qualifies as an emergency relief (ER) disaster, establish the estimates for the eligible ER disaster damages and outline the scope of work through adequate location and description of damage information.

by approximately 30%²³ and has not been able to recover to its pre-hurricane ridership levels as of May 2021.

HTA has completed most of the emergency repairs associated with Hurricanes Irma and Maria, obligating more than \$237 million of Emergency Relief funds. However, HTA is still behind on its progress to restore systems to an operational state. The improvements executed by HTA to restore the system to an operational state include a modular bridge installation, landslide repairs, safety device installation and other highway reconstruction projects. Proposals have been submitted for the first permanent repair projects associated with signage, safety, and lighting improvements. The construction for these first permanent repair projects is expected to commence between the fourth quarter of FY21 and the first quarter of FY22.

Delivery of the ER program must be accelerated, given that HTA has \$23.5 million available for upcoming obligations (related to landslide projects) and has transferred \$241.8 million of ER funds to EFLHD to aid in program execution. Nearly four years post-hurricane, these investments must be deployed to address funding needs. Current efforts are related to finishing design, National Environmental Policy Act (NEPA) documents, ROW acquisition, procurement support for landslides, signage and safety projects, and bridge scouring repair. Future obligations for permanent repair projects will depend upon the allocation of additional funds and amount of funds to be transferred to EFLHD.

Exhibit 14: Hurricane Emergency Relief Funding Allocation and Disbursement

ER program event (\$M)	Funding needs	Allocated funds by FHWA	Unmet need	Transferred to EFLHD	Funds available to HTA for obligation	Obligated by HTA	Available for HTA obligation
Hurricanes Irma and Maria	836.1	502.8	333.3	241.8	261.0	237.5	23.5

Toll fare receipts have returned to their pre-hurricane levels of approximately \$130 million by FY19.²⁴ Toll fine receipts, however, still remain at \$0 due to a delay in the restoration of fine collection. In addition, transit fare receipts pre-COVID are still below their FY17 levels.

3.3) Impact of 2020 Earthquakes on HTA activities

On January 7, 2020, an earthquake with a magnitude of 6.4 caused significant damage throughout Puerto Rico's south and southwestern region, prompting the closure of segments of roads, including short segments of two major roads: PR-52 (km 106 in

²³ HTA Tren Urbano Ridership Data, comparing 12 months before Hurricane Maria with 12 months after Tren Urbano operation was restored.

²⁴ Number does not account for payments of HTA to the concessionaires of PR-5, PR-17, PR-22 and PR-199.

Ponce), PR-2 (km 218 at Peñuelas and km 153.9 in Mayagüez). As a result, the Federal Government classified several municipalities as major disaster areas.²⁵

All roads were promptly opened using Federal Highway Administration's ER funds, including an initial \$5 million allocation of quick release from ER funds. Initially, HTA had estimated the damages to these roads to be approximately \$26.1 million, including both emergency and permanent repairs.²⁶ For these repairs, the Federal Highway Administration has allocated \$14.0 million, of which \$13.1 million has been obligated by HTA. In addition, approximately \$3.6 million is estimated to require state funds, mostly for permanent repairs, matching, and engineering services. HTA also plans to begin the design of permanent repairs for major structure rehabilitation and replacement, as well as sites where rockfall and landslides were experienced.

Exhibit 15: Earthquake Emergency Relief Funding Allocation and Disbursement

ER program event (\$M)	Funding needs	Allocated funds by FHWA	Unmet need	Available to HTA for obligation	Obligated by HTA	Available for HTA obligation
January 2020 earthquakes	26.1	14.0	12.1	14.0	13.1	0.9

3.4) Impact of COVID-19 on HTA activities

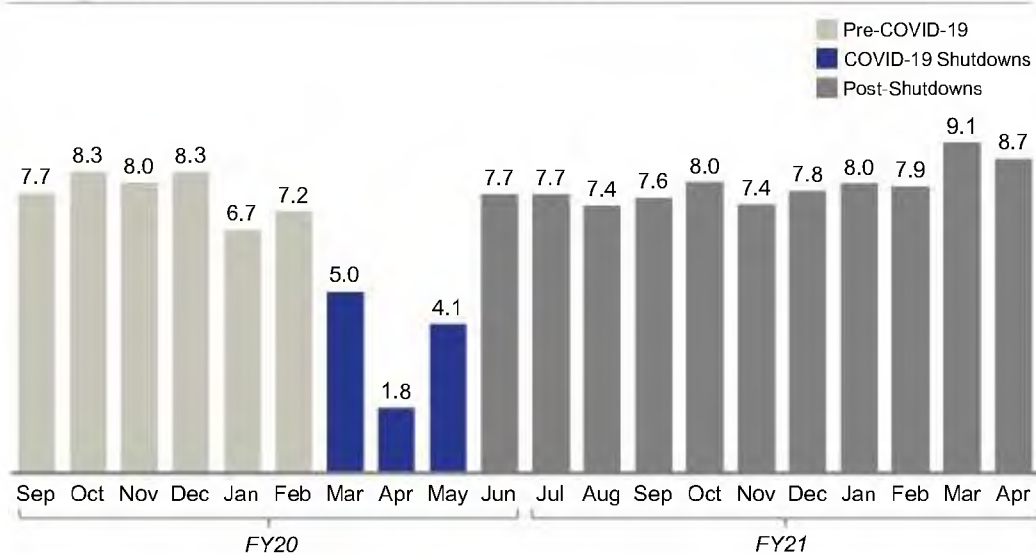
The onset of COVID-19 in March 2020 quickly and dramatically impacted HTA's operations and financial performance. The below exhibits show the impact of lockdowns on monthly toll road transactions, Tren Urbano ridership, and capital project delivery. As the below exhibits indicate, monthly transactions on HTA's four toll roads declined 53% from a pre-COVID average of 7.7 million per month to an average of 3.6 million per month from March to May 2020. From June 2020 onwards, average monthly transactions settled into an equilibrium of around 6.7 million per month, a 13% decline from pre-COVID levels.

²⁵ The municipalities of Ponce, Guánica, Guayanilla, Yauco, Utuado, Peñuelas, Adjuntas, Cabo Rojo, Corozal, Jayuya, Lajas, Lares, Maricao, San German, San Sebastian, and Villalba were declared as major disaster areas as a result of the January 7, 2020 earthquakes.

²⁶ Damage estimates included herein are based on events and preliminary designs to date and thus may increase in future.

Exhibit 16: Monthly Toll Transactions for HTA-operated Toll Roads, FY19 & FY20

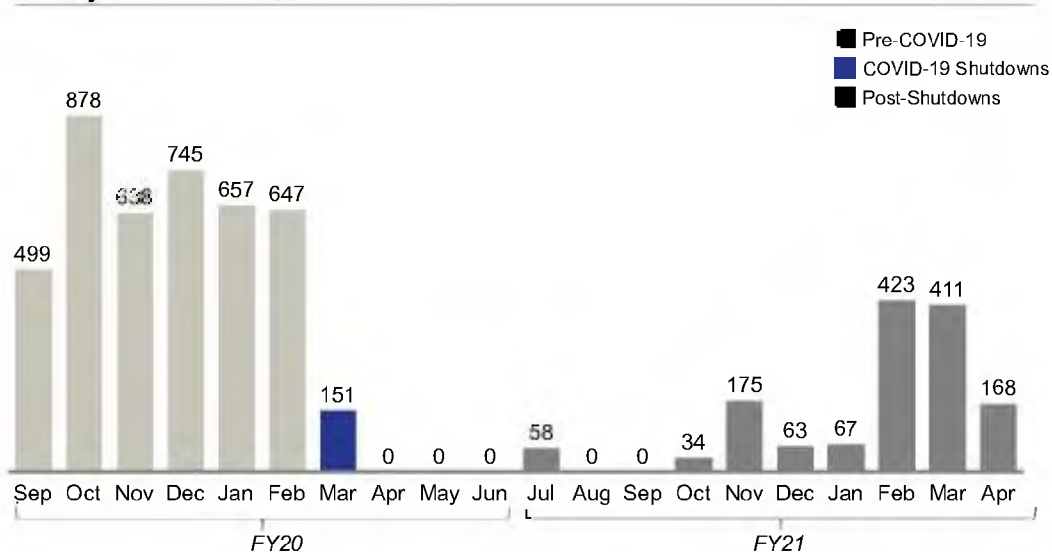
Monthly toll transactions on PR-20, PR-52, and PR-66, \$ Millions



Transit assets experienced a more dramatic decrease in revenues, given Tren Urbano and feeder bus service was entirely shut down from mid-March until July 2020, and again in August and September 2020. More recently, ridership has experienced modest improvements, though monthly revenues are 38% below their pre-COVID levels.

Exhibit 17: Monthly Transit Revenues for Tren Urbano, FY19 & FY20

Monthly transit revenues, \$ Thousands



COVID-19 has also caused significant delays in construction project schedules, leaving HTA unable to achieve its target KPI for project duration. As of April 15, 2020, post-María

repair projects presented a 22.8% increase in project duration, originally was within the KPI target.²⁷ While HTA has continued to monitor the effects of the COVID-19 pandemic on its CapEx program, the projected duration on the post-hurricane repair projects have been noted to increase to 59.4%, which does not meet the “on-time” delivery target for the project duration metric. The significant increase is largely attributable to fifty-six days of lockdown-required extensions and projected additional delays.

HTA has enacted and implemented standard operating procedures (SOPs) to operate effectively under the present conditions, allowing HTA to partially mitigate the impact of the pandemic and the lockdown. HTA has established procedures to make payments to critical contractors, consultants, and suppliers both during the lockdown and upon resumption of construction and other field operations, upholding the terms of the MOU with FHWA. Despite the lockdown, contractors have continued to retain and pay their workforce. Expediting payment for work completed is a priority to mitigate extended negative economic impact during the lockdown and keep contractors’ financial condition more stable. HTA also implemented remote procedures for documentation required when partial field operations resume, including requests for information (RFIs), Change Orders (COs) and Extra Work Orders (EWOs), and accepting electronic documents instead of physical copies. HTA has also created SOPs to maintain compliance with protocols and alignment of resources to manage the federal reimbursement process remotely.

Furthermore, HTA may have to address significant contractor claims due to the impact of COVID-19. The Agency is working closely with FHWA to determine the impact of these claims, which include extended overhead and extra cost for changed conditions. Due to the uncertainty about the validity of the claims, this risk is not reflected in the Certified Fiscal Plan.

²⁷ KPIs as established within HTA’s MOU with FHWA set the target for change in duration (program level) to be acceptable at <25%.

PART III – INFRASTRUCTURE AGENDA

Given the current condition of the network and years of under-investment, HTA's capital program must prioritize investments to achieve and maintain a SOGR of roads and transit assets.²⁸ With a projected decline in population (reduction of ~913,000 people by 2051) and a declining gross national product (GNP) (10% decline by 2051), a focus on SOGR, instead of enhancements to road networks, promotes an effective use of funding and optimizes existing transportation assets. In an era of decreasing economic activity, population, and travel demand, the Authority needs to prioritize maintaining its existing roads, highways, and bridges over building out additional capacity. Therefore, the primary goal of HTA's capital program shall be to keep Puerto Rico's roads, highways, bridges, and transit in SOGR.

HTA has historically been unable to achieve SOGR because of its inability to execute the Capital Improvement Program (CIP)²⁹ or prioritize critical maintenance projects.³⁰ In recent years, HTA has made notable progress in improving its rate of capital disbursements—particularly in FY20, when HTA was achieving 90% and above of the plan before the onset of COVID-19. HTA's performance in FY21 is similarly progressing well, with 87% of the plan in completion. Projects that advance SOGR for assets will therefore be prioritized under the Infrastructure Agenda, and any projects with aims outside of SOGR improvement will be subject to stringent evaluation criteria.³¹

HTA has a unique opportunity to pursue federal discretionary grant funding for projects focused on system enhancement and strategic network completion. Funding for these grants is competitive and uncertain; however, HTA's proposed plan to acquire these funds will be supported by the transportation sector reform. Therefore, this Plan assumes that \$12.7 million in state-funded soft cost investment for discretionary projects will be pursued in FY22 but does not assume any state-funded investments in subsequent years; this, however, does not speak to the likelihood that HTA's robust strategy will result in positive outcomes for the pursuit of discretionary projects. The results of the FY22 funding cycle will be evaluated in future Fiscal Plans, which may prompt a change in this approach. The pursuit of discretionary funding, however, should not put any SOGR progress at risk.

The Infrastructure Agenda serves as the foundation of the Fiscal Plan as follows. The MOUs signed with FHWA, and other federal agencies detailed in Chapter 2 relate primarily to HTA's capacity to execute capital projects. The key performance indicators, outlined in Chapter 1 and re-evaluated below, are centered on HTA successfully meeting its SOGR goals. In pursuit of achieving SOGR, a series of fiscal measures detailed in Part V indicate a path for HTA to increase funding and execute the capital plan to allow for the improved maintenance of the road network.

²⁸ See Chapter 4.

²⁹ Plan that identifies necessary capital projects and provides a schedule for their execution as well as for their financing

³⁰ See Chapter 5.

³¹ See Chapter 6.

CHAPTER 4: BRINGING ROADS TO SOGR

4.1) Bringing HTA's roads to SOGR

Currently, Puerto Rico is ranked 51 out of 52 for quality of roads in the United States. Puerto Rico's poor road quality imposes economic costs on its residents, decreases safety, and increases the overall cost of road maintenance.³² Well-maintained roads reduce vehicle operating costs, bolster quality of life for residents who commute daily, and make Puerto Rico more competitive both for tourism and major industries responsible for the movement of significant exports and imports. This makes improving the condition of Puerto Rico's roads a key part of the broader structural reforms the Commonwealth is undertaking to grow Puerto Rico's economy, attract investors, increase jobs, promote business, and broadly encourage economic development. Furthermore, a more resilient infrastructure network will allow Puerto Rico to be better prepared for future natural disasters.

As of 2021, 12% of interstate pavement is in poor condition, above the 5% maximum requirement specified by FHWA. Furthermore, only 15% of interstate pavement and 3% of non-interstate pavement in Puerto Rico are in good condition, which is significantly below the target performance of 81% of interstate and non-interstate pavement in good condition established by peer states, indicating that much progress must be made for the remaining pavement to meet the needs of Puerto Rican residents. To address the overall condition of road pavement, HTA must adopt project-level KPIs to achieve capital delivery progress towards meeting FHWA requirements, and eventually, target performance.

According to third party estimates conducted in 2018,³³ HTA would need to spend approximately \$2.7 billion in construction hard costs over a 10-year period from 2019 to 2028 to achieve SOGR.³⁴ Including soft costs at an assumed 14% ratio,³⁵ the total 10-year spend to reach SOGR is estimated to be \$3.2 billion.

Since FY19, HTA has made progress towards goal of SOGR, having disbursed an estimated \$694 million.³⁶ From FY22-28, HTA will disburse an additional \$2.0 billion in SOGR hard cost expenditures.

Beyond FY28 and through FY51, HTA would need to spend an estimated total of \$7.1 billion³⁷ in construction hard costs, or an average of \$307 million per year, in order to

³² Cost of maintaining the system frequently measured as "Lifetime Cost of Ownership," or the total cost of repairs for maintenance of a specific section of a highway or road. It is expected that letting roads deteriorate increases maintenance repairs in the long-run, leading to higher total costs than if they would have been kept at SOGR.

³³ Third party estimates completed by CMA.

³⁴ PRHTA 2018-2028 Capital Improvement Program Validation Report, p. 63. Although these estimates are from FY18, they provide a valid reference point for estimating long-term SOGR costs given the long-term lifecycles of the assets. The total is \$2.618 billion without inflation-adjustments, which becomes \$2.717 billion when annual targets are adjusted for inflation.

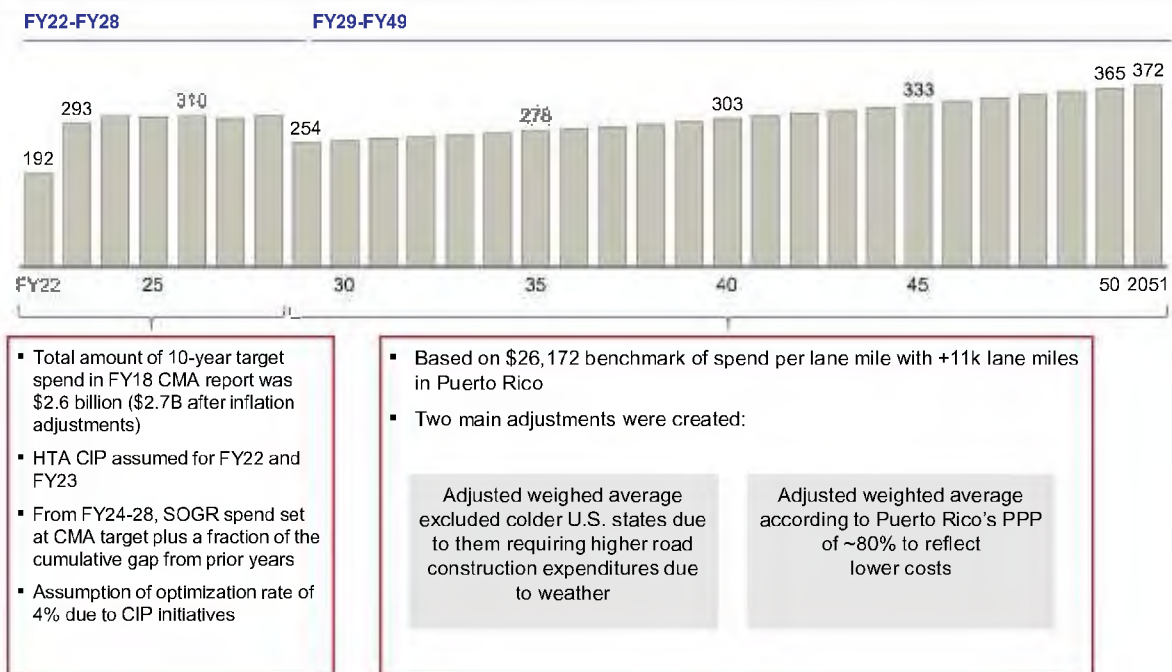
³⁵ Soft cost ratio based on the actual planned soft and hard costs in HTA's CIP for SOGR projects from FY22-26.

³⁶ From year-end Budget-to-Actuals reports. \$177M in FY19, \$223M in FY20, and \$293M in FY21 (including projections by end of year)

³⁷ Includes hard and soft costs of both Federal and non-Federal construction.

maintain its assets in SOGR.³⁸ This level of investment is based on comparable investment levels of peer states, adjusted for relative purchasing levels between Puerto Rico and the mainland US and adjusted for inflation (See Exhibit 18 for additional detail).

Exhibit 18: Overview of Capital Investment Projections Methodology, \$ millions



As described in Chapter 13, new P3 on HTA toll roads have the potential to accelerate progress toward SOGR. The Metropistas P3 for PR-22 and PR-5 provides a reference example. Since 2011, Metropistas has contributed \$1.6 billion to HTA for the right to operate and collect tolls on PR-22 and PR-5. These funds have been used to reduce existing debt, improve road quality, and accelerate safety improvements.³⁹ As a result, 99% of PR-22's pavement is in "good" or "fair" condition under Metropistas' management, compared to 88% of Puerto Rico's interstate system as a whole.⁴⁰

4.2) Current State of HTA's transit network

Tren Urbano continues to stagnate in its ability to be an effective and efficient transit system capable of serving riders' needs in the San Juan metropolitan area. While Tren Urbano was initially projected to attain a monthly ridership of approximately 3.4 million passengers per month by 2010,⁴¹ it currently has a ridership of only approximately 0.45 million passengers per month. Tren Urbano's transit farebox recovery ratio (the share of

³⁸ To develop these capital investment estimates, the cost to maintain each line mile of HTA's network was benchmarked against peer state transportation systems, and then adjusted by local factors.

³⁹ https://www.fhwa.dot.gov/ipd/project_profiles/pr_pr22_and_pr5_lease.aspx

⁴⁰ 2028 Puerto Rico Transportation Asset Management Plan, Final Revised as of October 8, 2019

⁴¹ Review of the Tren Urbano Finance Plan, US General Accounting Office, Dated 03/31/2000, p.2.

expenses covered by fare revenues) is down to 7% from 17% in 2017.⁴² Peer systems, meanwhile, have farebox recovery ratios of ~25%.⁴³ As such, the percent of non-fare directly generated public transit revenue (as a percent of total transit revenue) in Puerto Rico is about half of the US median.⁴⁴

TU has suffered from mismanagement that predates its initial construction. Construction took 75% longer than expected, delaying TU's opening by four years and consequently increasing project costs from \$1.5 billion to \$2.3 billion. A 2018 assessment after Hurricanes Irma and María found that more than 50% of the turnstiles (barriers) are not operational; 20% of the ticket vending machines ("TVMs") have defects; the software is outdated; and the system is not Payment Card Industry ("PIC")-compliant, which prevents users from purchasing tickets with debit and credit cards. Consequently, the current condition of the Tren Urbano results in public accessibility reduction, reduced attractiveness of facilities, and a lower quality of service. TU has failed to fix these problems despite the availability of federal funding since 2012, and as such, TU continues to witness decreasing revenues and ridership. HTA must make the necessary capital expenditures to repair the point-of-sale (POS) machines as an initial step to improve the transit system. These steps are further discussed in Chapter 10, which includes fiscal measures expected to drive revenue increases and improve TU operation.

⁴² <https://www.transit.dot.gov/ntd/data-product/2019-data-tables>

⁴³ National Transit Database

⁴⁴ <https://www.transit.dot.gov/ntd/data-product/2019-funding-sources>

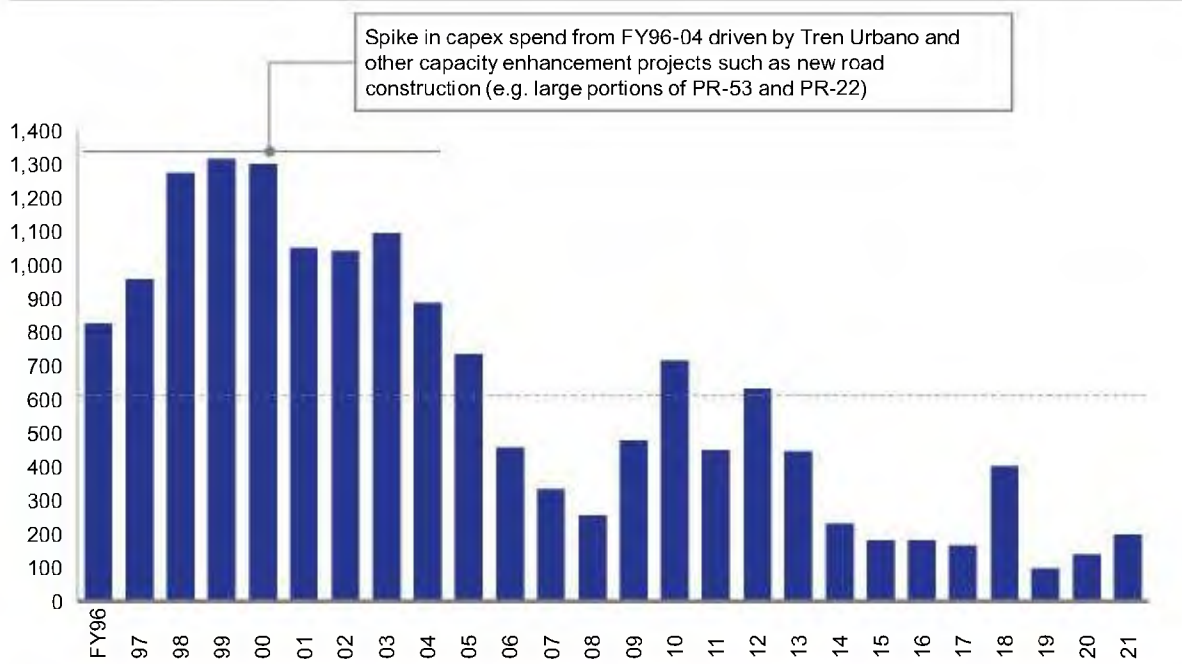
CHAPTER 5: CURRENT CAPITAL DELIVERY PROCESS AND OUTCOMES

Historically, Puerto Rico's transportation system has suffered as a result of underinvestment and lack of a clear process for delivering capital programs.

From FY96 to FY04, HTA averaged \$661 million⁴⁵ in total capital disbursements per year, excluding Tren Urbano investments and including capacity enhancement projects such as new road construction (see Exhibit 19). By FY07, however, as the recession hit Puerto Rico, capital spending decreased to below \$400 million annually, falling to \$257 million in FY08. During the years prior to Hurricane María, spending continued to decline, reaching a low point of \$168 million in FY17.

Exhibit 19: Historical HTA Infrastructure Spend, FY96-FY21⁴⁶

Total annual capex spend¹, \$M Adjusted to 2018 USD



Total CIP expenses. Includes Transit CIP.
SOURCE: PRHTA Data

In FY19, HTA disbursed only 29% of its budgeted capital expenditures.⁴⁷ HTA's inability to spend was driven a difficulty in finding construction labor (due to the increased need for projects on the island after Hurricane María), operational inefficiencies, and procurement delays.

For FY20, HTA set goals to increase planned spend and ensure that all planned spend was indeed disbursed. Between Q1 and Q2 of FY20, HTA disbursements were tracking to 90% and above of targets due to operational improvements, including timely payment of

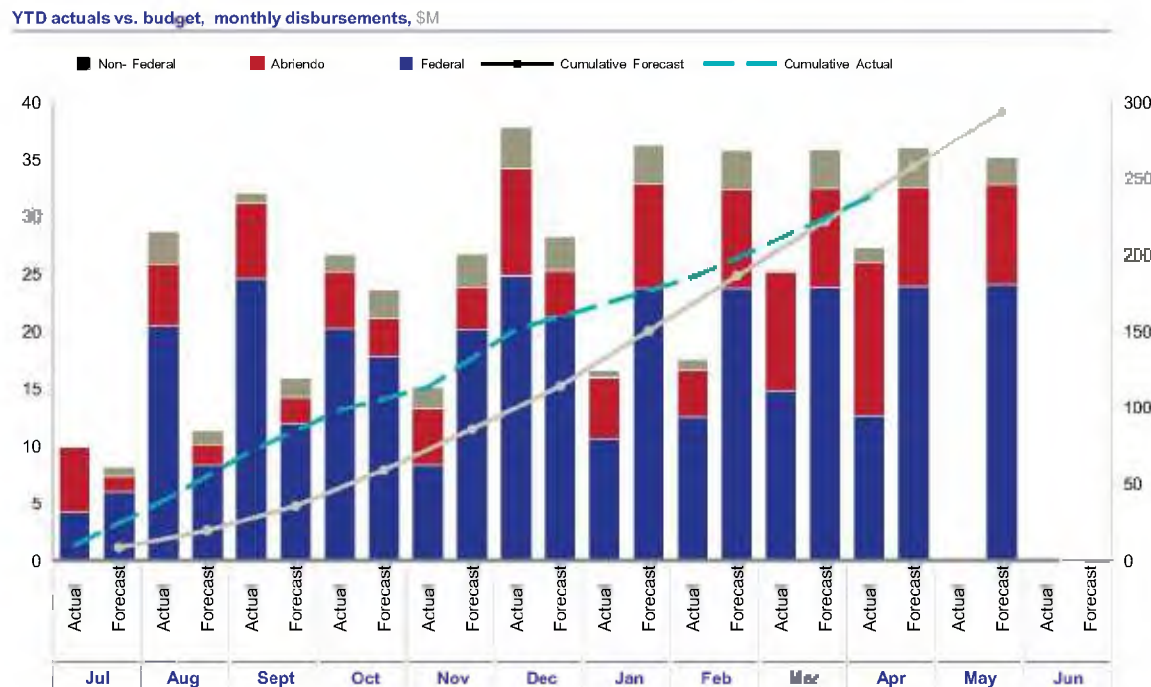
⁴⁵ In 2018 \$USD.

⁴⁶ Includes Total capex spend which is non-Federal and Federal construction hard and soft costs as well as Transit CIP and capital ROW payments.

⁴⁷ HTA July 2019 B2A reporting

contractors and effective project prioritization. However, after multiple earthquakes and the onset of the COVID-19 pandemic, HTA was unable to meet its targets for the remainder of FY20, averaging 52% of budgeted capital expenditures.⁴⁸ As of April 30 2021, HTA has performed markedly better, disbursing 87% of budgeted capital expenditures (see Exhibit 20).

Exhibit 20: HTA capital project delivery budget-to-actuals, as of April 30 2021



To ensure HTA focuses both on building the right projects and achieving target spending levels in a given year, HTA follows a structured capital improvement plan update process. The output of this process is a list of prioritized projects to be delivered over the next five years with anticipated disbursements for each year.

Currently, this CIP is developed in an ad-hoc manner, with project selection driven primarily by regulations and requirements of each funding source. Safety is a frequently emphasized factor in project selection across all funding sources. For regular FHWA funds for the Highway Improvement Program, projects are selected by giving priority to high-volume expressways, ensuring funds are spread geographically across the Island.

Beginning in FY22, HTA must adopt a more systematic, data-driven approach to project selection, utilizing a prioritization framework similar to that introduced in the June 2020 Certified Fiscal Plan (see Exhibit 21). The framework focuses on the outcomes of the system and further utilizes specific metrics, allowing HTA CapEx planning teams to determine asset condition and prioritize delivery of projects that provide the most value. Chapter 12 provides further detail and lays out several additional measures that HTA must adopt to further increase the efficiency of its project delivery.

⁴⁸ HTA June 2020 B2A reporting

Exhibit 21: HTA CIP Prioritization Framework

Achieve a state of good repair	System Performance	30	<ul style="list-style-type: none"> Improve/maintain condition of capital assets
Improve performance of most critical corridors	System Performance; Economic Vitality; Mobility and Accessibility	25	<ul style="list-style-type: none"> Improve intersection performance, system bottlenecks, and transit Increase operational capacity in a cost effective manner Improve performance of freight and high travel corridors Prioritize the completion of projects which connect to ports and economic centers, and complete the island's strategic highway network
Resiliency, safety, and emergency response	System Performance; Environmental Sustainability	20	<ul style="list-style-type: none"> Improve safety, resiliency, and emergency response Improve resiliency and emergency response Reduce reliance on motorized travel, promote energy efficiency, and incorporate "reduce, reuse, recycle", practices in delivering infrastructure
Promote alternative modes of travel	Environmental sustainability; Mobility and Accessibility	15	<ul style="list-style-type: none"> Invest in redevelopment of urban centers to reduce need for motorized travel Improve coverage, capacity, and service of alternative modes of travel Improve modal connectivity (first mile/last mile) Improve coverage, capacity, and service of alternative modes of travel
Ensure cost effective-ness	Mobility and Accessibility	10	<ul style="list-style-type: none"> Cost effectiveness assuming mobility benefits Provide mobility for transportation-disadvantaged populations

Current progress against capital program KPIs

To achieve the goals of its capital program, HTA sets and monitors performance targets at various stages and outcomes for the capital program and capital processes. Many of the metrics meet performance standards, while some fall short. For preconstruction, HTA is on target for delays in notice to proceed notification letters (NTP) by a margin of 13 days, but its percentage of planned NTP awards is below the <80% target at 75%. HTA has consistently failed to provide the ratios of soft costs to hard costs. For construction, HTA is slightly below target of 90% of federal funds planned obligated at 88.6%. HTA is on target for changes in cost at 9.2%. The 9.2% projected cost increase is lower than the contingencies included in the FHWA program; therefore, at project closure, the surplus will be made available for other projects. The KPI that measures percentage change in duration of projects was a challenge during the COVID-19 pandemic, which caused significant project delays. As of Q3, there is a 59.4% change in duration of projects, resulting mostly from the lockdown-mandated 56-day extensions. Finally, the disbursement variance for projects is still above the 20% target at 45%.

Exhibit 22: HTA Capex KPI performance, FY21 YTD

Strategic priorities	Metrics ¹	FY20 Actual	FY21 Actual	Target
Preconstruction Program	Delays in NTP (Days from plan – Program Level) Quarterly – Cumulative	6 Days	16.9 Days	<30 Days
	% of Planned NTP Awards (Program Level) Quarterly	100%	100%	>80%
	% of Federal Funds Obligated (Program Level) Annual	N/A	88.6% ¹	>90%
	% Soft vs Hard Costs (Program Level) Annual – Previous Year	N/A	N/A	15%
Construction Delivery	% Change in Cost (Program Level) Quarterly - Cumulative	1%	10.9%	<15%
	% Change in Duration (Program Level) Quarterly - Cumulative	5%	67.0%	<25%
	Disbursement Variance (Program Level) Quarterly - Cumulative	2%	45%	<20%
Capital Improvement Program	Disbursement Variance (Program Level) Quarterly - Cumulative	N/A	N/A	20%

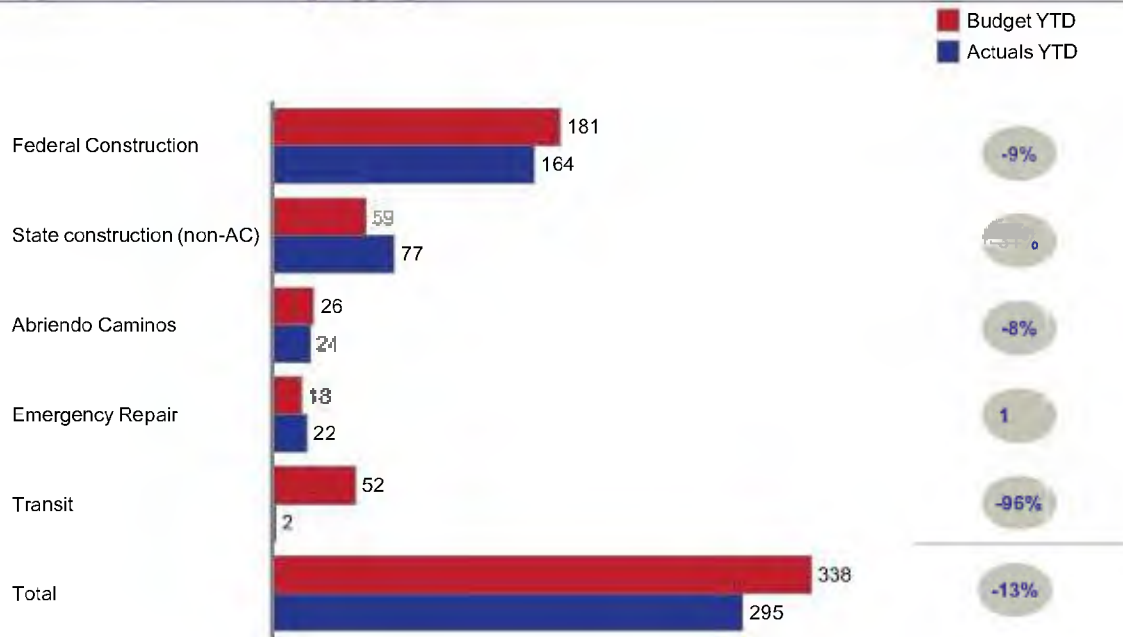
¹ Applies to regular funds only. Per most recent estimates, 65.9% of emergency relief funds have been obligated.

Variation in program performance

Performance by program within the overall capital plan, however, continues to vary. Due to HTA's better-than-expected performance in the first quarter, YTD variance is -13% with \$295 million in work performed compared to the projections of \$338 million (see Exhibit 23). Within this, disbursements on federal projects have lagged the budget by 9%, Abriendo Caminos by 8%, and transit by 96%. Meanwhile, other state projects have exceeded the budget by 31% and ER by 18%.

Exhibit 23: HTA FY21 YTD CapEx performance, by program

YTD (April 30 2021) actuals vs. budget by program, \$M



Despite significant delays and unforeseen challenges due to COVID-19, HTA's progress in recent years reveals a path forward to achieving target metrics of success. In FY22 and onwards, HTA must adopt and utilize the project prioritization framework (see Exhibit 21), further detailed in Chapter 12, to ensure that capital delivery improvement continues to approach and achieve target KPI metrics.

CHAPTER 6: DISCRETIONARY FUNDS FOR STRATEGIC PROJECTS

As explained in Chapters 4 and 5, HTA's capital priority is to achieve and sustain SOGR on its transportation assets. As such, regular state and federal appropriations are used for SOGR projects, while any non-SOGR projects (e.g., strategic enhancements to the highway network) must use an alternate source of funding.

That said, given the potential availability of federal discretionary funds for mitigation and disaster relief, HTA may be able to pursue strategic projects that will provide resiliency to the strategic highway network and economic development at a regional level. To fund these strategic projects, HTA must explore alternative non-state funding sources including discretionary grants, new revenue opportunities, or public-private partnerships. HTA should prioritize discretionary federal grants such as:

- Community Development Block Grant – Disaster Recovery/Mitigation (CDBG-DR/MIT),
- Rebuilding American Infrastructure with Sustainability and Equity (RAISE),
- Infrastructure for Rebuilding America (INFRA) grants for highway projects, and
- Capital Investment Grants (CIG) for transit projects.⁴⁹

Securing Puerto Rico's fair share of these funds on an annual basis (estimated to be 1% of the national program) would result in approximately \$2.1 billion of funding available for non-SOGR projects over 30 years. The June 2021 Certified Fiscal Plan includes annual investments for HTA to build a grant management team to ensure that Puerto Rico is competitive in federal discretionary funding decisions.

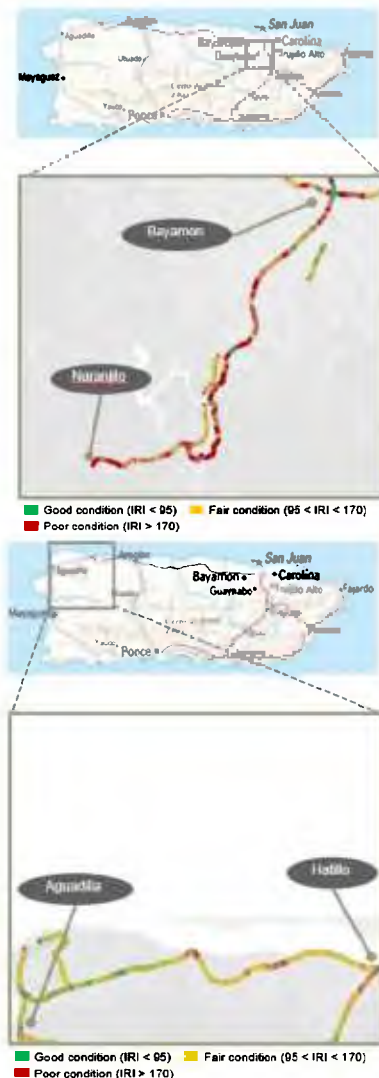
Discretionary funding, if secured, may allow HTA to evaluate additional projects as prioritized by the framework. Examples of strategic, non-SOGR projects include:

- **Completing PR-10, connecting Utuado and Adjuntas:** Construction of the four remaining segments of PR-10 between Utuado and Adjuntas, with an approximate investment of \$217M. Currently, the users must take the PR-123, a tertiary road highly vulnerable to disaster events. The project will provide a fast, safe, and modern connection in the central region of Puerto Rico. It will improve the movements of goods and services while connecting the industrial and agricultural areas with Rafael Hernández airport in Aguadilla and the existing and proposed ports located at the south region between the municipalities of Penuelas and Ponce.



⁴⁹ More information on BUILD grants can be found here: <https://www.transportation.gov/BUILDgrants>; more information on INFRA grants can be found here: <https://www.transportation.gov/buildamerica/financing/infra-grants/infrastructure-rebuilding-america>; more information on CIG grants can be found here: <https://www.transit.dot.gov/CIG>

- **Extension of PR-5 from Bayamón to Toa Alta:** Construction of the pending segment of PR-5 Expressway between its intersection with PR-199 in the Municipality of Bayamón and the intersection with PR-167 in the Municipality of Toa Alta, at an estimated investment of \$155 million. The new segment will serve as an alternate to PR-167, a two-lane road in each direction that traverses the municipality of Bayamón and is subject to traffic congestion and safety problems. The project would provide a fast, modern, and safe road connection between the municipalities of the central region (i.e., Naranjito, Orovois, Ciales, Comerío and Barranquitas) with the San Juan Metropolitan Area.
- **Extension of PR-22 from Hatillo to Aguadilla:** Construction of the extension of the toll highway PR-22 from its intersection with PR-2 in the Municipality of Hatillo to its intersection with PR-11 in the Municipality of Aguadillas, requiring an investment of \$102 million. Currently, PR-22 from San Juan to Hatillo and PR-2 from Hatillo to Aguadilla constitute the main route connecting the northwest region of the island with the San Juan Metropolitan Area. The PR-22 extension is expected to reduce travel time and improve highway capacity. The proposed project could also serve as an alternative route to PR-2 during emergencies and as a tsunami evacuation route for communities located close to the north coast.



If HTA is not able to secure additional sources of funding, the financial feasibility of investing in strategic projects not aimed at achieving SOGR is very low. Projects that do not contribute to the system's SOGR that are expected to be funded with CW transfers must be subject to stringent evaluation criteria using the metrics set forth in Chapter 12. Discretionary funding is further discussed in Chapter 10.7.

PART IV – CURRENT BASELINE FINANCIAL PROJECTIONS

In the absence of any fiscal measures and without a Commonwealth transfer beyond its regular CapEx appropriation, HTA will have a cumulative deficit of approximately \$5.5 billion for the duration of the Fiscal Plan period, from FY22-51 (see Exhibit 24). When the CW transfer is provided to fund the non-toll and transit assets, this deficit pre-measures is reduced to \$2.3 billion from FY22-51. This baseline estimate pre-transfer includes a capital deficit of approximately \$3.8 billion, driven by HTA's investments in SOGR projects beyond allocated capital contributions, and an operating deficit of approximately \$2.3 billion, driven by flat toll fares that do not keep pace with inflation or increasing operating costs.

The level of the cumulative deficit emphasizes the need for revenue enhancements and cost savings to ensure HTA's fiscal responsibility. Without measures for improvement, the level of the Authority's dependence on cash transfers from the Commonwealth is unsustainable. To improve its capacity to balance costs and investments, HTA must implement the fiscal measures described in more detail in Chapters 9 through 12.

Exhibit 24: Baseline Financial Performance of HTA

Revenues / Expenses, \$M	FY22	FY23	FY24	FY25	FY26	FY 22-26	FY 22-51
Operating revenues (HTA)	158	167	166	166	164	823	4,859
Operating revenues (FTA)	20	20	20	20	20	100	600
Operating expenses	(262)	(248)	(247)	(249)	(240)	(1,246)	(7,731)
		(61)	(61)	(63)	(55)	(323)	
Capital revenues (Federal)	270	317	278	247	180	1,293	6,079
Capital revenues (CW)	236	60	58	59	60	473	2,203
Capital expenses	(393)	(534)	(473)	(455)	(418)	(2,274)	(12,118)
Operating CW transfer		172	138	136	148	594	3,278

Exhibit 25: Pre-measure Operating Baseline Performance of HTA, Part 1

Item, \$M	FY22	FY23	FY24	FY25	FY26	FY22-26	FY22-51
Toll fares	133	131	130	131	131	657	3,901
Toll fines	9	20	21	20	21	91	579
Other income	10	10	9	10	7	45	208
Transit fares	6	6	6	6	6	30	171
	20	20	20	20	20	100	600
TU Operation & Maintenance	(71)	(71)	(70)	(83)	(73)	(367)	(2,652)
Toll Highways Administration & Maintenance	(43)	(41)	(41)	(42)	(42)	(210)	(1,419)
Salaries & Related Benefits	(48)	(45)	(44)	(43)	(43)	(223)	(1,494)
Pensions	(36)	(36)	(36)	(36)	(36)	(182)	(810)
Other Operating Expenses	(34)	(30)	(29)	(21)	(21)	(135)	(790)
ROW payments	(12)	(8)	(10)	(10)	(10)	(51)	(63)
Integrated Transportation System	(12)	(11)	(11)	(11)	(11)	(56)	(381)
Litigation Reserve	(4)	(4)	(4)	(2)	(2)	(15)	(63)
Other Program Expenses	(2)	(2)	(2)	(2)	(2)	(8)	(59)
		(61)	(61)	(63)			

Exhibit 26: Pre-measure Operating Baseline Performance of HTA, Part 2

Item, \$M	FY22	FY23	FY24	FY25	FY26	FY22-26	FY22-51
Regular FHWA funds	175	168	185	196	159	883	5,204
Regular CW CapEx appropriation	53	54	54	55	56	272	2,002
Non-regular CW CapEx funds ¹	177	-	-	-	-	177	177
Emergency Funds	62	80	56	30	11	225	249
Capital FTA funds	40	74	32	25	15	186	951
							5,283
Highway construction hard costs	(192)	(288)	(302)	(325)	(319)	(1,425)	(8,787)
Highway construction soft costs	(83)	(76)	(59)	(69)	(58)	(335)	(1,865)
Emergency Repair Costs	(83)	(80)	(64)	(30)	(11)	(248)	(248)
Transit CIP	(42)	(76)	(34)	(27)	(17)	(212)	(711)
Toll Optimization CIP	-	-	-	-	-	-	-
Local Construction	(10)	(10)	(10)	(10)	(10)	(60)	(362)
ROW payments	(3)	(4)	(4)	(4)	(4)	(20)	(145)
Total CW transfer	-	172	138	138	148	594	3,278

CHAPTER 7: REVENUE BASELINE

7.1) Operating revenue baseline

HTA has five core sources of operating revenues: (1) toll fares; (2) toll fines; (3) FTA funds; (4) transit fares; and (5) other income. The projected revenues in the Baseline Scenario⁵⁰ from each source over the period of the 2021 Certified Fiscal Plan is seen in Exhibit 27.

Exhibit 27: Operating revenues by source, FY22-51

Revenue Source, \$M	FY22	FY23	FY24	FY25	FY26	FY 22-26	FY 22-51
Toll fares	133	131	130	131	131	657	3,901
Toll fines	9	20	21	20	21	91	579
Transit fares	10	10	9	10	7	45	208
Operating FTA funds	6	6	6	6	6	30	171
Other income	20	20	20	20	20	100	600
Total baseline operating revenues	178	187	186	186	184	923	5,459

1. Toll revenue baseline: Toll revenues contribute 71% of HTA's operating revenue baseline, including both HTA and concessionaire-operated roads. Toll fares for the following four HTA-operated toll roads have remained flat for 16 years with no adjustment since 2005: PR-20, PR-52, PR-53, and PR-66. Future toll revenues were estimated using actual toll revenues and toll transactions from FY19 (pre-pandemic), and then adjusted each year based on the Commonwealth's real GNP projections. The cumulative financial impact of toll fare revenues is projected to slightly decline in the short term compared to the 2021 Certified Fiscal Plan, given that the impacts of COVID-19.

Baseline toll revenues incorporate the effect of changes in the distribution of revenues in roads that are managed and operated by concessionaires (e.g., Metropistas and Teodoro Moscoso Bridge). Toll estimates for roads operated by concessionaires include scheduled annual increases of 1.5% plus annual inflation for the following toll roads: PR-5, PR-17 (bridge portion), PR-22, and PR-199 (bridge portion).⁵¹ Additionally, the toll revenue

⁵⁰ Baseline scenario assumes that HTA will implement no fiscal measures over the period of this Fiscal Plan.

⁵¹ HTA has a contract with Guaynabo City to collect the toll revenues of the municipal toll road through the Autoexpreso operator for a fee.

forecast considers net collection risk factors, which adjust gross revenue to HTA by uncollected amounts of Metropistas, Guaynabo and Teodoro Moscoso, and increase net revenue by off-period v-tolls⁵² collected. The toll revenue baseline does not include measures to increase toll rates for HTA-operated roads; the impact of toll rate increases is shown separately in Chapter 10.1.

2. Toll fine baseline: Fines imposed on drivers who pass through toll plazas without paying represent 5% of the Authority's operating revenue baseline in FY22, approximately \$9.1 million for FY22.⁵³ Toll fine revenue is based on toll operation-related violations, a \$15 flat fine as revised by Act 220 of 2018. Toll fine forgiveness legislation passed in September 2018 has delayed Electronic Toll Fine collections for the past two fiscal years. This suspension was originally planned to end in January 2020 with the installation of a new toll operating system. However, as of Q4 FY21, the new toll operating system is not yet operational. Despite some delays due to COVID, the required infrastructure is in place to resume toll fine collection, and it now requires only a firm commitment to an activation timeline. HTA intends to resume toll fine collection in July 2021.

Electronic Toll Fine Collection (ETC) is assumed to have an 18-month collection cycle with 60% compliance in the baseline. Actual toll violation transactional data from FY21 and Puerto Rico real GNP assumptions are used to project future toll violation transactions and subsequently toll fine revenue once collection of toll fines resumes. Projections are slightly lower compared to the FY21 Certified Fiscal Plan, given that HTA did not resume fine collection in FY21, and the baseline now accounts for actual growth from COVID-19. Resuming toll fine collection in July 2021 would generate \$91 million within 5 years and \$579 million over the entire period of this Fiscal Plan.⁵⁴

3. Operating funds from FTA: Through FY27, HTA will continue to receive approximately \$20 million annually in operating funds from FTA for regular preventive maintenance activities for Tren Urbano. Following FY27, the Fiscal Plan assumes the amount will grow with inflation each year through FY51.

4. Transit fares: Revenues include Tren Urbano and Metrobus operating income. Operating revenues are projected to grow in line with the Puerto Rico real GNP projections included within the Commonwealth 2021 Certified Fiscal Plan. When combined with inflation-based increases across most transit operation costs (e.g., labor, electricity, insurance), declining revenues yield \$30 million in transit fares for FY22 to FY26 and approximately \$171 million until FY51.

5. Other revenue baseline: HTA collects 7% of its total operating revenue baseline, \$7 million per year on average, from rent and lease receipts, import levy tax fees, toll tags sales, earned interest, and other non-toll and transit-based revenue.⁵⁵ The Authority earns per year on average: (a) approximately \$1.5 million from services related to its highway

⁵² Refers to video tolls that are additional fees incurred by drivers that pass through ORT gantries without an account or with a faulty transponder.

⁵³ Ibid.

⁵⁴ Assumes 1% of toll transactions would become fines and that 60% of all fines would be collected, in line with HTA's historical performance.

⁵⁵ Based on projected FY22 data.

operations, such as electronic toll device sales and truck weighing; (b) approximately \$2.7 million from property sales (only until FY25); (c) approximately \$0.9 million from interest accrued on its bank accounts; (d) approximately \$0.4 million from property rentals; and (e) approximately \$0.3 million from activities related to Tren Urbano operations (e.g., Tren Urbano station space rentals, vending machines). For the revenue baseline, rent-related revenues are expected to move in line with inflation through FY51, while other types of income are projected to remain flat.

7.2) Capital contribution baseline

HTA mainly derives capital contributions from two sources: (1) regular FHWA funds and (2) regular CW CapEx appropriation.⁵⁶ HTA also expects to receive ad hoc funding until at least FY26 from three additional sources: (3) Non-regular Commonwealth Capital Expenditure funds; (4) Federal Emergency Funds; and (5) Non-regular Capital FTA funds. The projected revenues from each source over the period of this Fiscal Plan are illustrated in Exhibit 28 below.

Exhibit 28: Capital Contributions by Source, FY22-51

Revenue Source, \$M	FY22	FY23	FY24	FY25	FY26	FY 22-26	FY 22-51
Regular FHWA funds	175	168	185	196	158	883	5,204
Regular CW CapEx appropriation	53	54	54	55	56	272	2,002
Non-regular CW CapEx funds	177	-	-	-	-	177	177
Emergency funds	62	80	66	30	11	225	249
Non-regular Capital FTA funds	40	74	32	25	15	186	651
Total baseline capital contributions	507	377	337	307	240	1,767	8,283

1. Regular FHWA Funds: HTA's net allocation of FHWA funds for highway construction projects is approximately \$139 million per year, as provided in the Fixing America's Surface Transportation Act or "FAST Act."⁵⁷ From FY22 to FY26, FHWA funds will exceed the regular allocation to an annual average of \$176 million, because the Authority plans to continue delivering on a backlog of projects that have been rolled over from previous years. The Fiscal Plan assumes that the regular \$139 million balance will resume in FY27 and grow in line with inflation thereafter.

⁵⁶ Note: The CW CapEx appropriation is distinct from the CW Operating Transfer, which is discussed further in Chapter 15.

⁵⁷ HTA's actual allocation is approximately \$158 million, but \$19 million is deducted annually in penalties because the drinking age is below 21. <https://www.fhwa.dot.gov/fastact/factsheets/territorialhighwaysfs.cfm>

2. Regular Commonwealth CapEx Appropriation: Commonwealth CapEx Appropriations are transferred to HTA each year to enable sufficient funding for HTA's CIP. In FY22, the appropriation is approximately \$53 million and projected to grow with inflation through FY51, for a FY22-51 average of \$67 million per year.

3. Non-regular Commonwealth CapEx Funds: Since 2018, HTA has been responsible for the execution of the Abriendo Caminos program, which supports pavement reconstruction and highway maintenance. The fourth phase of this program is expected to be completed in FY22, with an allocation of \$87 million. HTA is not expected to receive continued funding for Abriendo Caminos, or other program specific allocations, beyond FY22, per the Commonwealth 2021 Certified Fiscal Plan. HTA additionally expects to deploy "rollover" funds of \$90 million across FY22 and FY23. These rollover funds reflect obligations from previous budgets for projects with signed contracts for which funds have been obligated but not yet disbursed.

4. Federal Emergency Funds: Revenues related to Federal emergency programs are set at an amount equal to the expenses they are projected to fund.⁵⁸ HTA has been allocated approximately \$216 million from FHWA and \$9 million from FEMA for construction projects to repair the damages caused in the island's highway network by Hurricane Maria in 2017 and by earthquakes in 2020.

5. Non-regular Capital FTA Funds: From FY22-FY26, HTA is projected to receive approximately \$186 million of capital funds to execute a series of capital improvements to Tren Urbano. Capital improvements include repairing damages caused by Hurricane María, replacing telecommunication systems, and installing a new fare collection system.

⁵⁸ Per the Bipartisan Budget Act of 2018, 115th Cong., 2d Sess. (2018), p. 88; line 8.

CHAPTER 8: EXPENSE BASELINE

8.1 Operating expense baseline

HTA's operating expenses are distributed into the following categories: (1) Tren Urbano Operation and Maintenance; (2) Toll Highways Administration and Maintenance; (3) Salaries and Related Benefits; (4) Pensions; (5) Other Operating Expenses; (6) Opex Right of Way (ROW) payments; (7) Integrated Transportation System (ITS); (8) Litigation Reserve; and (9) Other Program Expenses. The projected annual expenses for each category are shown in Exhibit 29.

Exhibit 29: Operating expenses by category, FY22-51

Expense category, \$M	FY22	FY23	FY24	FY25	FY26	FY 22-26	FY 22-51
Tren Urbano Operation & Maintenance	(71)	(71)	(70)	(83)	(73)	(367)	(2,652)
Toll Highways Administration & Maintenance	(43)	(41)	(41)	(42)	(42)	(210)	(1,419)
Salaries & Related Benefits	(48)	(45)	(44)	(43)	(43)	(223)	(1,494)
Pensions	(36)	(36)	(36)	(36)	(36)	(182)	(810)
Other Operating Expenses	(34)	(30)	(29)	(21)	(21)	(135)	(790)
ROW payments	(12)	(8)	(10)	(10)	(10)	(51)	(63)
Integrated Transportation System	(12)	(11)	(11)	(11)	(11)	(56)	(381)
Litigation Reserve	(4)	(4)	(4)	(2)	(2)	(15)	(63)
Other Program Expenses	(2)	(2)	(2)	(2)	(2)	(8)	(59)
Total baseline operating expenses	(262)	(248)	(247)	(249)	(240)	(1,246)	(7,731)

1. Tren Urbano Operation and Maintenance: Tren Urbano Operation and Maintenance, \$71 million in FY22, is projected to account for 27% of total operating expenses in FY22. Tren Urbano's operating contract represents 68% of this category for FY22, amounting to approximately \$48.2 million. These estimates are consistent with FY21 projections. This operating contract primarily covers operation of trains, maintenance of track and facilities, fare collection, and electronic system management. The other largest line items within this expense category are utilities (approximately \$8.5 million) and insurance contracts (approximately \$9.1 million), above peer benchmarks for similar expenses.⁵⁹ After FY22, projections are based on per-year estimates consisting

⁵⁹ While peers spend, on average, 2.7% of operating expenses on insurance, HTA spends 12.3%; similarly, peers spend 5.5% of operating expenses on utilities, while HTA spends 11.6%. Based on National Transportation Database 2019 operating expense information, compared to same peers as mentioned above.

of contracted Tren Urbano base compensation and Puerto Rico's expected inflation. There is a small, irregular increase in FY25, mainly due to a one-off vehicle overhaul program. After FY32, when the current contract with TU's private operator expires, main contract costs are assumed to increase in line with inflation.

2. Toll Highways Administration and Maintenance: Electronic Toll Collection (ETC) costs, which consist of commissions paid to the toll operator, make up the plurality (44% in FY22) of total toll highways administration and maintenance costs, which are \$43 million for FY22. ETC costs are estimated to be 12.6% of baseline toll fares. Starting in FY23, all other costs within this expense category⁶⁰ are expected to grow in line with Puerto Rico's expected inflation rate, while ETC costs are projected as a percentage of baseline toll fares collections over each year.

3. Salaries and Related Benefits: From FY22-26, total salaries and related benefits are expected to be an average of approximately \$49 million per year, 62% of which are associated with construction-related payroll. These salaries are for both construction and non-construction salaries. Salaries and related benefits are assumed to remain flat until FY25, after which they are forecast to grow at Puerto Rico's expected inflation rate. Other benefits such as overtime, pension, Social Security, and Medicare are calculated as a proportion of the base salary. Early retirement costs reach zero by FY37 given that those who retired early will stop receiving payments at this point.⁶¹ For FY22, health insurance and early retirement costs are the highest cost categories within this operating expenditure line item, behind regular salary amounts.

4. Pensions: Pension costs are calculated based on assumptions about the duration of expected retirement payments to current and past HTA employees. Pension costs are projected to slightly decrease over time, with an average annual cost of \$27 million from FY22-51.

5. Other Operating Expenses: Within this category, service costs makes up 60% and are expected to be higher in the next two years due to the costs associated with toll optimization and Title III-related expenses. The remainder of the expenses in this category include utilities, IT costs, and administrative costs.⁶² Costs within this expense category are expected to begin leveling off from FY25 onwards as service costs taper off and stabilize. These expenses are generally expected to grow with inflation, reaching \$32 million by FY51.

6. Operational Right of Way (ROW) Payments: Operational ROW Payments correspond to claims that have already been submitted to HTA and corresponding ongoing payments. Opex ROW payments are expected to amount to approximately \$12

⁶⁰Includes reparation and maintenance of highway, electricity, insurance, security services, reparation and maintenance of vehicles, maintenance and conservation of equipment, reparation and maintenance of buildings, equipment rentals, rent of buildings, miscellaneous equipment, cellphone and telephone service, travel expenses, computer hardware and software, merchant fees, and an "all other" category.

⁶¹Costs related to early retirement do not increase with inflation.

⁶²Includes rent for buildings, electricity, security services, insurance, telephone and cellphone service, reparation and maintenance of vehicles, water, rental of equipment, maintenance and conservation of equipment, subscriptions, computer software, reparation and maintenance of buildings, postal services, cultural activities, travel costs, training, printing and materials, and any other category.

million in FY22. This amount may fluctuate on an annual basis, so current projections are based on HTA's case-by-case estimates. From FY23 onwards, the average ROW payments will depend on the outcomes and treatment of claims in HTA's Title III case, between \$10.3 million and \$8.3 million over the next three years, decreasing to approximately \$2.8 million in FY29.⁶³ Operational ROW payments are not currently planned beyond FY29.

7. Integrated Transportation System (ITS): The ITS is a feeder bus system flowing into Tren Urbano, operated by a third-party provider. The ITS total projected cost for FY22 is approximately \$12 million, and these costs are expected to average \$11 million per year from FY22-26. These expenses include bus service expenses, a monthly fixed management fee, farebox expenses, and other special service fees. In FY22, as in FY21, HTA activated a contractual service increase of 13% for a new support line, which leads to higher "other" costs. Bus service expenses are calculated using assumptions based on mile and hourly costs for MetroBus, Metro Urbano, and Tren Urbano Conexión, reflecting the structure of the contract with the third-party provider. This is driven by forecasted volume of miles traveled by buses within ITS and the operational hours of the system's buses. Costs are projected to increase with Puerto Rico's inflation over the forecast period, while the total hours and miles traveled per year of these buses remains flat.

8. Litigation Reserve: Litigation reserve projections are based on historical litigation expenses, with FY22 expected reserve to be \$4 million, a decrease from \$8.5 million in FY21 given the reallocation of the remaining litigation reserve budget. This amount is expected to remain constant from FY22-24 given anticipated COVID-19 related lawsuits and claims from contractors. HTA is working closely with FHWA to determine the impact of these claims, including extended overhead and extra costs for changed conditions. In FY25 onwards, the litigation reserve amount will decrease to \$1.5 million and is expected to grow slightly with inflation for the duration of the Fiscal Plan period. This view is influenced by the minimal historic actual disbursements in this category over the past three years.

9. Other Program Expenses: This category consists of additional expenses related to construction support.⁶⁴ Equipment rental is the largest item within this category, primarily for car leases to support transportation within construction sites. These expenses are generally expected to grow with inflation reaching \$2.5 million by FY51.

8.2 Capital expense baseline

The operating expenses of HTA are distributed into the following seven categories: (1) Highway Construction Hard Costs; (2) Highway Construction Soft Costs; (3) Emergency Repair Costs; (4) Transit CIP; (5) Local Construction Costs; (6) Right of Way (ROW)

⁶³ These ROW payments are included in operating expenditures because they correspond to previous claims that must be paid out whereas ROW payments that are included in capital expenditures correspond to potential future claims related to construction.

⁶⁴ Including Professional Services, Rent of Buildings, Electricity, Surveillance and Monitoring, Other Costs, Insurance, Telephone Services, Repair and Maintenance of Vehicles, Water, Equipment Rental, Maintenance and Conservation of Equipment, Subscriptions and Bills, Printed Materials, Computer-related Expenses, Repair and Maintenance of Buildings, Training, Trips, Postal Services, and Cultural Activities.

payments; and (7) Other Capital Expenses. The projected annual expenses for each category, shown in five-year increments over the Fiscal Plan period, are shown in Exhibit 30.

Exhibit 30: Capital expenses by category, FY22-51

Expense category	FY22	FY23	FY24	FY25	FY26	FY 22-26	FY 22-49
Highway Construction Hard Costs	(192)	(288)	(302)	(325)	(319)	(1,425)	(8,787)
Highway Construction Soft Costs	(83)	(76)	(59)	(59)	(58)	(335)	(1,865)
Emergency Repair Costs	(63)	(80)	(64)	(30)	(11)	(248)	(248)
Transit CIP	(42)	(76)	(34)	(27)	(17)	(212)	(711)
Transit Capital Expenses	(10)	(10)	(10)	(10)	(10)	(60)	(362)
ROW payments	(3)	(4)	(4)	(4)	(4)	(20)	(145)
Total baseline capital expenses	(393)	(534)	(473)	(455)	(418)	(2,274)	(12,118)

1. Highway Construction Hard Costs: In FY22, hard costs are projected to be \$192 million with 73% of these costs coming from federal construction projects. Given the impact of COVID-19 on capital delivery for FY20 and FY21, projects were delayed and pushed back into subsequent years relative to the 2020 Certified Fiscal Plan. From FY22-FY23, hard costs are estimated based on HTA's existing and planned project budgets. For FY24-28, hard costs are estimated based on the SOGR targets from the PRHTA 2018-2028 Capital Improvement Program Validation Report, plus any gap between historical SOGR spend and targets (see Exhibit 18 for further detail).⁶⁵ From FY22 to FY26, FHWA funds account for 53% of hard costs, while state funds account for 47% of hard costs. After FY28, these hard costs are based on benchmarks of CapEx spend per lane mile from other US states and adjusted for Purchase Power Parity and base year inflation.⁶⁶ These costs will also grow in line with Puerto Rico's projected inflation.

2. Highway Construction Soft Costs: Soft costs for capital expenses refer to pre-construction project-linked costs (e.g., design, environmental studies) as well as FHWA non-project linked planning and compliance costs (e.g., state planning and research). Soft costs for FY22 are expected to be \$86 million with approximately 41% of these costs being federal planning and compliance costs. Planning and compliance costs are taken from HTA's CIP from FY22-26 and then grown at inflation thereafter. Project-linked soft costs are taken from HTA's CIP in FY22-23, and for FY24 onwards are calculated as 14% of project-based hard costs. This 14% is in turn determined by the average project-based soft cost ratio in HTA's CIP for FY22-26. This ratio is in line with both HTA's historical soft cost needs as well as best practices from other US jurisdictions.⁶⁷

⁶⁵ PRHTA 2018-2028 Capital Improvement Program Validation Report, p. 63. Estimates are in 2018 \$USD. Estimates for FY26 to FY28 subtract project level investments in preceding 8 years to determine the remaining investment required to achieve SOGR based on the PRHTA 2018-2028 Capital Improvement Program Validation Report.

⁶⁶ 2017 Reason Institute Road Benchmark Data, Found online at: <https://reason.org/policy-study/24th-annual-highway-report/24th-annual-highway-report-executive-summary/>.

⁶⁷ Ibid.

3. Emergency Repair: Emergency repair funds, projected from FY22 to FY26, are provided by federal and local emergency funding. Federal emergency cost spending makes up the majority of emergency repair spending, totaling \$224 million from FY22-FY26. Local emergency costs are expected to amount to \$24 million in the same period. Emergency repair funding is short-term and expected to conclude in FY26.

4. Transit CIP: Transit CIP refers to investments that aim to improve Tren Urbano. These investments include completing short term enhancements, including emergency relief projects, installing new telecommunications systems, repairing rolling surfaces, upgrading automated fare collection, and repairing Point-of-Sale systems. Transit CIP expenses are projected to be \$42 million in FY22 and expected to peak at \$76 million in FY23. From FY22-FY26, these expenses are based off a list of Transit CIP projects, of which funding has been approved by FTA. After FY26, Transit CIP costs grow at \$16.5 million with inflation.

5. Capital ROW Payments & Local Construction Costs:⁶⁸ Capital ROW payments are expected to be approximately \$4.7 million per year. From FY27 onwards, Capital ROW payments grow with inflation.

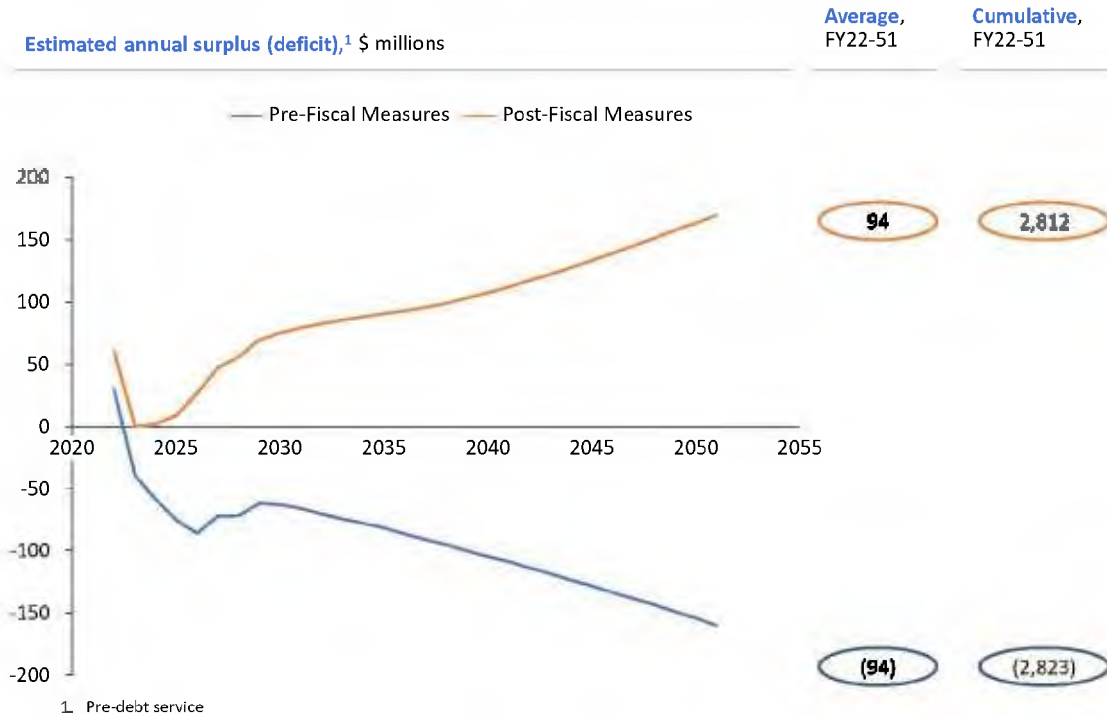
6. Local construction costs: Local construction expenditures average \$12.1 million for the Fiscal Plan period.

⁶⁸ ROW payments within capital expenditures category refers to potential future claims related to construction, whereas those included in the operational expenditures category are past claims that must be paid out. Division reflects HTA accounting practices.

PART V – FINANCIAL PROJECTIONS WITH FISCAL MEASURES

The Fiscal Measures described in the following chapters are critical to HTA’s long-term financial sustainability. If promptly and fully implemented, they have the potential to generate \$5.6 billion in impact from FY22-51, taking HTA’s \$2.8 billion baseline deficit to a \$2.8 billion post-measures surplus, as shown by Exhibit 31 below.

Exhibit 31: Impact of Fiscal Measures on HTA projected surplus (deficit), FY22-51



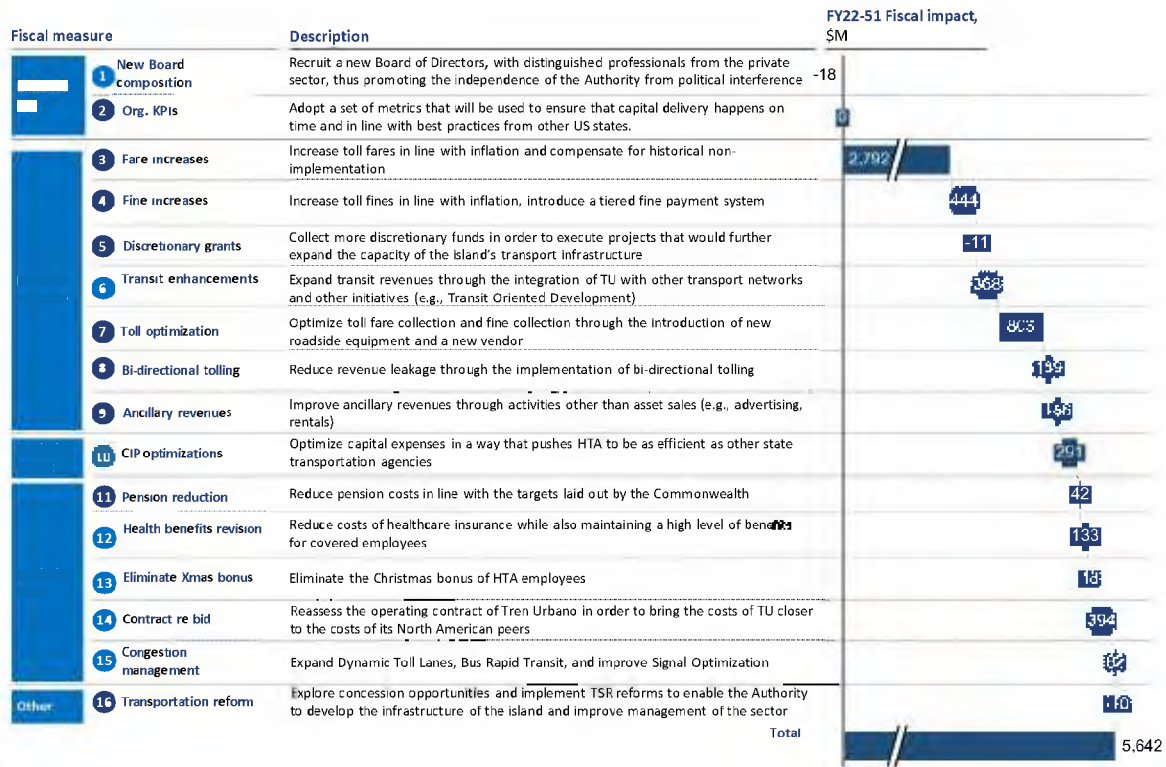
HTA’s baseline financial projections and expected deficits from FY22 onwards demonstrate the need for the Authority to optimize expenses, generate revenues, and support the transportation network of Puerto Rico through the implementation of Fiscal Plan measures. Although previous Certified Fiscal Plans outlined requirements to implement most of these measures, limited progress has been achieved to date (see Exhibit 32). HTA must successfully implement all the fiscal measures in the 2021 Certified Fiscal Plan to become fiscally sustainable and improve the transportation infrastructure that supports economic development in Puerto Rico.

Exhibit 32: Implementation status of Fiscal Measures from HTA 2020 Certified Fiscal Plan

		Fiscal Impact ¹ \$M			
		FY21 YTD Target	FY21 YTD Actuals		
Fiscal measure		Description			
Governance	1	Recruit a new Board of Directors	Recruit a new Board of Directors, with distinguished professionals from the private sector, thus promoting the independence of the Authority from political interference	-	-
	2	Adopt organizational KPIs	Adopt a set of metrics that will be used to ensure that capital delivery happens on time and in line with best practices from other US states.	-	-
Revenue	3	Fare increases	Increase toll fares in line with inflation and optimize fare collection through a new electronic tolling system	5.8	-
	4	Fine increases	Increase toll fines in line with inflation, introduce a tiered fine payment system and optimize fine collection through a new electronic tolling system	2.2	-
	5	Collect discretionary funds	Collect more discretionary funds in order to execute projects that would further expand the capacity of the island's transport infrastructure	-	-
	6	Expand transit revenue	Expand transit revenues through the integration of TU with other transport networks and other initiatives (e.g., Transit Oriented Development)	0.2	-
	7	Optimize toll collection	Optimize toll fare collection and fine collection through the introduction of new roadside equipment and a new vendor	15.2	-
	8	Implement bi-directional tolling	Reduce revenue leakage through the implementation of bi-directional tolling	N/A	N/A
	9	Improve ancillary revenue	Improve ancillary revenues through activities other than asset sales (e.g., advertising, rentals)	-	-
Costs	10	Optimize capital expenses	Optimize capital expenses in a way that pushes HTA to be as efficient as other state transportation agencies	12.1	-
	11	Reduce pensions	Reduce pension costs in line with the targets laid out by the Commonwealth	N/A	N/A
Other	12	Reduce healthcare cost	Reduce costs of healthcare insurance while also maintaining a high level of benefits for covered employees	-	-
	13	Eliminate Xmas bonus	Eliminate the Christmas bonus of HTA employees	-	-
	14	Reassess contracts	Reassess the operating contract of Tren Urbano in order to bring the costs of TU closer to the costs of its North American peers	N/A	N/A
	15	Manage congestion	Introduce new congestion management mechanisms (e.g., Dynamic Toll Lanes, Bus Rapid Transit, Traffic Signal Optimization)	1.7	-
Total	16	Explore concessions & implement reforms	Explore concession opportunities and implement TSR reforms to enable the Authority to develop the infrastructure of the island and improve management of the sector	-	-
	Total			34.8	-

Executing these fiscal measures would generate approximately \$5.6 billion in increased revenues and cost savings over the next 30 years. Revenue enhancements are expected to drive most of this amount, generating approximately \$4.7 billion. Cost savings would contribute approximately \$1.0 billion. Enhancing toll fares and fines through price increases and performance improvement accounts for \$4.0 billion of the \$4.4 billion (approximately 71% of the total fiscal benefit). The impact of each measure over time is provided in Exhibit 33.

Exhibit 33: Projected 30-year Fiscal Measure Impact relative to the Baseline



Implementing these measures would reduce HTA's projected cumulative pre-Commonwealth transfer deficit from FY22-51 to approximately \$466 million, instead of the approximately \$6.1 billion projected in the baseline scenario.

As seen in Exhibit 34 below, this cumulative \$466 million deficit from FY22-51 reflects a capital deficit of approximately \$3.6 billion combined with an operating surplus of approximately \$3.2 billion. The annual operating transfers from the Commonwealth total \$3.3 billion cumulatively. Further detail on this operating transfer is provided in Chapter 15.

Exhibit 34: Post-measures financial performance of HTA

Revenues / Expenses, \$M	FY22	FY23	FY24	FY25	FY26	FY 22-26	FY 22-51
Operating revenues (HTA)	201	225	238	246	252	1,163	9,845
Operating revenues (FTA)	20	20	20	20	20	100	600
Operating expenses	(273)	(244)	(234)	(235)	(226)	(1,212)	(7,281)
		1	24	31	48		3,164
Capital revenues (Federal)	270	317	278	247	180	1,293	6,079
Capital revenues (CW)	236	60	58	59	60	473	2,203
Capital expenses	(409)	(556)	(495)	(445)	(407)	(2,313)	(11,913)
Total CW transfer	0	179	138	136	148	600	3,284

Exhibit 35 highlights the improvements in HTA's operating and capital performance over various revenue and expense categories that will be achieved if HTA fully and promptly implements the outlined fiscal measures.⁶⁹ Chapters 9, 10, 11, 12, and 13 provide additional details on the fiscal measures outlined in Exhibit 33.

⁶⁹ In FY22, HTA is projected to have an operating deficit of \$52 million and a capital surplus of \$98 million. This may require reprogramming some capital funds for operating uses, to ensure HTA has sufficient operating funds available to it.

Exhibit 35: Post-measures operating and capital performance of HTA

Item, \$M	FY22	FY23	FY24	FY25	FY26	FY22-26	FY22-51
Toll fares	157	167	176	182	188	871	7,591
Toll fines	25	38	39	40	40	181	1,352
Other income	10	10	11	11	9	51	364
Transit fares	8	10	12	14	16	60	539
Operating FTA funds	20	20	20	20	20	100	600
				266		1,263	10,445
TU Operation & Maintenance	(71)	(67)	(59)	(72)	(62)	(330)	(2,258)
Toll Highways Administration & Maintenance	(46)	(43)	(41)	(41)	(42)	(214)	(1,417)
Salaries & Related Benefits	(44)	(41)	(41)	(40)	(40)	(206)	(1,343)
Pensions	(36)	(34)	(34)	(34)	(34)	(173)	(769)
Other Operating Expenses	(44)	(33)	(32)	(23)	(23)	(155)	(893)
ROW payments	(12)	(8)	(10)	(10)	(10)	(51)	(63)
Integrated Transportation System	(13)	(12)	(12)	(12)	(12)	(61)	(417)
Litigation Reserve	(4)	(4)	(4)	(2)	(2)	(15)	(63)
Other Program Expenses				(2)	(2)	(8)	(59)
				(235)	(226)	(1,212)	(7,281)
		1	24	31	46	50	3,184
Regular FHWA funds	175	100	105	196	158	883	5,204
Regular CW CapEx appropriation	53	54	54	55	56	272	2,002
Non-regular CW CapEx funds ¹	177	-	-	-	-	177	177
Federal Emergency Funds	56	74	62	26	7	225	225
Local Emergency Funds	6	6	4	4	4	24	24
Non-regular Capital FTA funds	40	74	32	25	15	186	851
			3	307			8,283
Highway construction hard costs	(189)	(280)	(295)	(318)	(310)	(1,392)	(8,573)
Highway construction soft costs	(81)	(74)	(57)	(57)	(56)	(325)	(1,807)
Emergency Repair Costs	(63)	(80)	(64)	(30)	(11)	(248)	(248)
Transit CIP	(42)	(76)	(34)	(27)	(17)	(196)	(711)
Toll Optimization CIP	(21)	(32)	(32)	-	-	(85)	(85)
Local construction costs	(10)	(10)	(10)	(10)	(10)	(48)	(344)
ROW payments	(3)	(4)	(4)	(4)	(4)	(20)	(145)
							(11,913)
							(3,630)
							(466)
Total CW transfer	0		138	136	148	600	3,284
				20	27	104	2,818

CHAPTER 9: ORGANIZATIONAL ENHANCEMENT FISCAL MEASURES

In order to become an efficient capital delivery organization, HTA must implement the following four fiscal measures:

- 1. Recruit a New Board of Directors**
- 2. Adopt Capital Delivery KPIs**
- 3. Conduct Personnel Mapping by Asset**
- 4. Improve Organizational Capacity**

9.1) Recruiting a new Board of Directors

In line with the requirements of the June 2020 Fiscal Plan, HTA will establish a Board of Directors that would provide regular guidance to HTA executives, improve fiscal and corporate governance of HTA, and establish the short-, medium-, and long-term operational priorities of the entity in a professional and apolitical manner to ensure its services and necessary capital expenditures are adequately funded. The Board must be composed of seven members: three public servants and four independent, distinguished professionals from the private sector. The public servant positions are to be filled by the Secretary of Transportation, the Secretary of Treasury, and the Executive Director of Puerto Rico Fiscal Agency and Financial Advisory Authority (AAFAF). The independent private professional positions are to be filled by a licensed engineer, a finance professional, and two professionals with proven public and private sector experience in infrastructure, planning, economic development, and/or public administration.

Board members must (i) be appointed by the Governor, with the advice and consent of the Senate, and (ii) be selected from a candidate list developed by a third-party private search firm. Members shall possess relevant and successful experience in long-term transportation planning and capital investments. Additionally, membership must be staggered with defined, six-year terms to avoid disruption related to political cycles. Finally, strict guardrails shall be put in place to ensure any conflicts of interest are avoided.

Recruiting the independent Board members is projected to cost approximately \$0.2 million in professional search fees during FY22. Retaining the independent Board members from FY23 onwards would require that HTA provide them with compensation similar to benchmark private sector boards or public corporation board members. The Board's total compensation, including all reimbursements for applicable office expenses, would equal approximately \$0.5M per year and increase in line with inflation after FY23. As stipulated in the HTA Enabling Act, members of the Board who are officials of the Government shall not receive additional compensation for their services and other members will be entitled to reasonable per diems, as noted above.

Creating and implementing this new board will require enabling legislation, which must be drafted and submitted to the Legislature along with a report that details the reform's

benefits. At present, HTA is reviewing proposals to engage a law firm to assist in this matter. The target date for legislative approval is December 31, 2021.

Exhibit 36: Required Implementation Actions for Recruiting a new HTA Board of Directors

Measure	Action item	Responsible party	Deadline
Create new Board of Directors for HTA	Engage law firm to assist in the legislative process	HTA	June 30, 2021
	Share with FOMB the draft of Law enabling the appointment of the Board	Commonwealth	September 30, 2021
	Approve Law enabling the appointment of the Board	Commonwealth	December 31, 2021
	Hire executive recruitment firm to identify potential independent Board members	HTA	January 31, 2022
	Approve appointment of independent Board members	Commonwealth	June 30, 2022

9.2) Adopting and measuring KPIs

HTA's performance is measured by its ability to deliver against a set of KPIs based on the best practices of other U.S. transportation authorities and aligned with federal requirements. By tracking the HTA's performance on different aspects of capital delivery (e.g., cost and time), HTA executives can identify and eliminate the inefficiencies that currently undermine transportation infrastructure development on the Island. These inefficiencies also make it difficult for HTA to complete projects without delays or cost overruns, and eliminating them would improve HTA's internal controls and accountability, thus ensuring that necessary capital expenditures are executed.

As of FY21, HTA has adopted and begun tracking the KPIs and targets in Exhibit 37 and Exhibit 38. HTA must track and report on the KPIs on a monthly basis and update its monthly budget-to-actuals reports, especially given that most FY21 reports did not include updated KPIs. Several of the capital delivery KPIs were not consistently updated, whether month to month or if required on a more frequent basis. Safety, Asset Quality, & Congestion KPIs were often updated as multi-year averages, rather than with the most recent annual data. Exhibit 37 shows that of the capital delivery KPIs shown in last year's Fiscal Plan, HTA has marginally regressed, likely due to the impacts of COVID-19. Like last year, HTA was unable to show capital improvement program variance. Since FY21, HTA has made marginal progress for Safety KPIs, improving pavement in good condition and reducing pavement in poor condition. By regularly tracking and reporting KPIs, HTA will be better equipped to measure its overall progress against these indicators.

Exhibit 37: Adopted KPIs - Capital Delivery

Strategic priorities	Metrics ¹	FY20 Actual	FY21 Actual	Target
	Delays in NTP (Days from plan – Program Level) Quarterly – Cumulative	6 Days	16.9 Days	<30 Days
	% of Planned NTP Awards (Program Level) Quarterly	100%	100%	>80%
	% of Federal Funds Obligated (Program Level) Annual	N/A	88.6% ¹	>90%
	% Soft vs Hard Costs (Program Level) Annual – Previous Year	N/A	N/A	15%
	% Change in Cost (Program Level) Quarterly - Cumulative	1%	10.9%	<15%
	% Change in Duration (Program Level) Quarterly - Cumulative	5%	67.0%	<25%
	Disbursement Variance (Program Level) Quarterly - Cumulative	2%	45%	<20%
	Disbursement Variance (Program Level) Quarterly - Cumulative	N/A	N/A	20%

¹ Applies to federal funds only. Per most recent estimates, 85.9% of emergency relief funds have been obligated.

Exhibit 38: Adopted KPIs - Safety, Asset Quality, & Congestion

Strategic priorities	Metrics	FY20 Actual	FY21 Actual	Target
Safety	# of road fatalities per 100M VMT	1.91	1.98	<1.86
	# of road serious injuries per 100M VMT	24.0	28.4	31.7
Asset quality	% of Interstate Pavement in Good condition ²	10.8%	15.2%	>2%
	% of Interstate Pavement in Poor condition ²	13.2%	12.0%	<5%
	% of Non- Interstate NHS Pavement in Good condition ²	2.2%	2.6%	>2%
	% of Non-Interstate NHA Pavement in Poor condition ²	9.0%	7.8%	<20%
	% of NHS bridges in Good condition ²	20.5%	18.0%	>10%
	% of NHS bridges in Poor condition ²	11.2%	9.0%	<10%
Congestion	\$ of congestion cost per customer	\$1,150	N/A	\$1,045 ¹
	Travel time index	1.31	N/A	1.23 ¹
	Mins for incident response	N/A	1.1	<15 mins

² As defined by FHWA using International Roughness Index (IRI)

In addition to the Capital Delivery and Safety KPIs, the transportation sector reform per the 205(a) letter includes a proposed outcome-based scorecard to track the impact of the reform plan. The reforms encourage the development of a transportation system that is

safe, efficient, clean, and fiscally sustainable. To ensure continuing progress towards an improved transportation network, a scorecard will be used to track leading and lagging indicators of the transformation.

While a few of the proposed metrics are already tracked by HTA (i.e., road condition and road safety), the additional metrics must be collected on a periodic basis beginning in FY22. Tracking of these metrics along with the adopted KPIs from FY21 will allow HTA to measure its progress as an organization and partner in the development of Puerto Rico's improved transportation sector. In Chapter 17, the reforms and corresponding suggestions for progress tracking are discussed in further detail.

Exhibit 39: Proposed KPIs - Transportation Sector Reform Scorecard

Objectives	Impact metrics	Current PR performance	US median performance
	Road condition: % of interstate pavement in poor condition	12	2
	Transit revenue generation: Non-fare directly-generated funding as % of total	12.3	23.7
	Train system condition: # of failures per 1M revenue mile	373	55
	Driving experience: Hours lost to congestion per person per year	58	54
	Sustainable commuting options: % sustainable mode share	22%	27%
	Road safety: Road fatalities, # per 100M VMT	2.0	1.1
	Air quality: Days with AQI > 100	19	4

On a project level, HTA executives must also work with division leaders and project administrators to identify more granular KPIs for each specific construction project by November 30, 2021. These metrics must be communicated to all project stakeholders (e.g., employees and contractors). Following this, division leaders and project administrators must design enforcement mechanisms, for instance, timelines of project milestones with project owners and penalties for KPI underperformance.

Exhibit 40: Required Implementation Actions for adopting and revising KPIs

Measure	Action item	Responsible party	Deadline
Track impact of reforms	Adopt transportation sector reform KPIs per the Commonwealth's selected scorecard	AAFAF	August 31, 2022

Measure	Action item	Responsible party	Deadline
Adopt project-specific KPIs	Submit proposed project-specific KPIs to FOMB for approval	HTA	August 30, 2021
	Approve project-specific KPIs (with any necessary revisions) and determine a reporting cadence	FOMB	September 30, 2021
Update KPIs	Confirm relevance of existing KPIs and propose any updates that might be necessary	HTA	January 30, 2022

9.3) Organizational Capacity Analysis & Development

Conduct productivity analysis

In anticipation of future asset transfers per the transportation sector reform, described in Chapter 17, it is critical that HTA develop a report illustrating how its current personnel are mapped to assets currently housed within HTA. HTA must develop a map that shows to what extent each role in the organization supports toll roads, non-toll roads, and transit assets. For roles split across asset types, HTA must estimate the fraction of that role attributable to each asset type and indicate whether the roles would be transferred to another entity as part of the transportation sector reform.

Furthermore, alongside asset-mapping, HTA must assess the productivity of its personnel. HTA must compile and submit a report to the FOMB that lays out the personnel required to deliver core services for each asset, including implementation of its capital plan. To estimate the impact of asset transfers, a clear understanding of the personnel within each function will allow HTA to assess its current operation and capital delivery for each of these assets, especially once asset transfers may change organization of personnel for each asset. Therefore, in addition to the personnel map, it is critical that HTA create a future-state organizational structure for the Plan duration after certain roles and responsibilities have been transferred to other entities. This organizational structure must highlight the gaps for which post-reform entities would need to hire personnel to fill the role. Overall, this analysis must be tied to a future-state mapping for what the future organization might look like for a toll road authority and a non-toll road authority, per the transportation sector reform. To complete these studies, HTA must hire a third-party firm to conduct an analysis of the personnel supporting assets within the Agency.

Exhibit 41: Required implementation actions for classifying HTA's personnel by function

Initiative	Action item	Responsible party	Deadline
Conduct personnel mapping by asset	Create an RFP for procurement of a third-party firm to conduct personnel mapping and productivity reporting study	HTA	August 30, 2021
	Study begins with selected third-party firm	HTA	November 30, 2021
	Study concludes, and HTA is able to assess the impact of asset transfers based on the mapping of personnel	HTA	June 30, 2022
	HTA provides the assessment to FOMB.	HTA	July 31, 2023

Improve organizational capacity

As part of the MOU with FHWA, HTA must improve its systems, procedures, and bylaws to become a more efficient organization and expedite project delivery process. In FY21, HTA launched an RFP with a third-party consultant to study and analyze potential areas for improvement. The resulting report had a series of recommendations that covered the following areas:

- Billing Process
- Organizational Structure
- Project Development Process
- Standard Documentation
- Laws and Regulations
- Standard Operating Procedures
- Training program

HTA has been in the process of implementing the recommendations above, including information technology enhancements, improvement to financial systems (Oracle-based), and new PMIS. Additionally, with the new systems and processes, a new set of SOPs are being issued to further HTA's efficiency.

The new organizational structure will include a new Executive Director's Advisory Office focused on Strategic and Effective Outsourcing within the Strategic Contracting and Risk Management Office (see Exhibit 42).

CHAPTER 10: FISCAL MEASURES: REVENUE INCREASES

The following six fiscal measures must be implemented by HTA and will enable HTA to increase its revenues by approximately \$4.8 billion over a 30-year period, thus delivering approximately 85% of the total fiscal measure impact:

1. Increasing toll fares and optimizing fare collection: \$3.2 billion (~68%)
2. Implementing bi-directional tolling: \$0.2 billion (~3%)
3. Increasing toll fines, introducing a tiered fine system and optimizing fine collection: \$0.8 billion (~17%)
4. Expanding transit revenues: \$0.4 billion (~8%)
5. Improving ancillary revenues: \$0.2 billion (~2%)
6. Adopting congestion management initiatives (DTL): \$0.1 billion (<1%)
7. Collecting discretionary funds: \$2.1 billion in additional investment (no net fiscal impact given corresponding expenditures for inflows)⁷⁰

10.1) Increasing toll fares and optimizing fare collection

HTA must enhance toll revenues by carrying out the following two initiatives that could raise approximately \$113 million in additional revenue cumulatively by FY26 and approximately \$3.2 billion cumulatively by FY51:

- Increase toll fares on HTA-operated toll roads
- Improve and expand the Open Road Tolling (ORT) system to improve efficiency in collecting toll fares⁷¹

Increasing toll fares

HTA plans to increase toll fares for HTA-owned toll roads in January of 2022, once the COVID-19 pandemic recovery is underway.⁷² Toll fare increases, tied to inflation, are regularly implemented in U.S. states and on the Puerto Rico toll roads that are managed and operated by concessionaires. Regular fare increases are necessary to ensure adequate investment in the toll road system for the continued maintenance of SOGR.

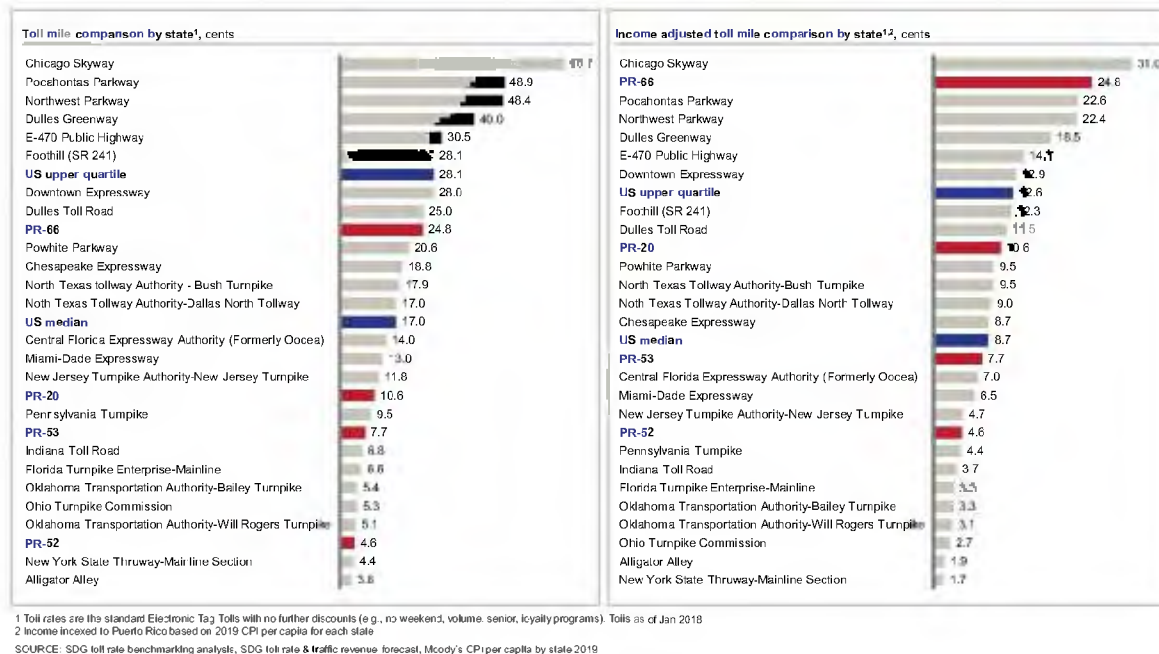
HTA has not adjusted toll fares for HTA-owned toll roads since 2005. Because of this, HTA has had difficulty investing in and improving its road infrastructure in years past, evidenced by the difference in the state of repair of HTA and concessionaire roads. As Exhibit 44 shows, HTA-owned roads, even with proposed fare increases (i.e., PR-52 and PR-53), are below the top 25% of U.S. toll road rates. Three of the four roads' fare rates are below the U.S. median, even when adjusted for income. PR-52, the largest toll revenue generator for HTA, falls below the U.S. median. This suggests an opportunity for toll fare increases that would not only generate additional revenue but also bring HTA-owned toll roads in line with U.S. peer roads.

⁷⁰ The net fiscal impact of these funds will be zero, because funds will be spent on discretionary projects beyond the maintenance of transportation assets in a SOGR. Separated out in fiscal measure impact.

⁷¹ Open road tolling (ORT), also called all-electronic tolling, cashless tolling, or free-flow tolling, is the collection of tolls on toll roads without the use of toll booths. An electronic toll collection system is usually used instead.

⁷² HTA-owned and operated roads are PR-20, PR-52, PR-53, and PR-66.

Exhibit 44: Comparison of tolling in Puerto Rico and other US states



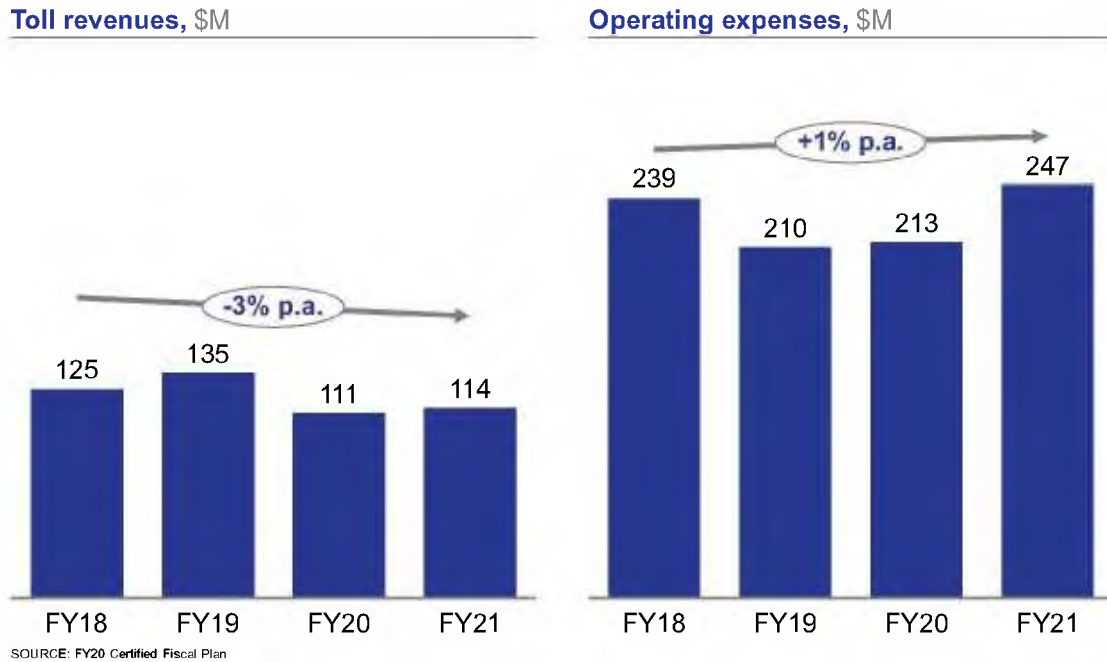
Toll fares now face a 16-year gap from keeping pace with expenses; each year HTA fails to implement these increases, fare pricing on the Island falls increasingly out of step with inflation and, by extension, the cost of maintaining HTA-owned roads and transportation assets. Thus, to ensure its operations and necessary capital expenditures are adequately funded, and to ensure the fiscal targets contained in this Fiscal Plan are met, HTA must introduce an initial toll fare increase to catch up on the inflation adjustments and increases it has failed to implement in the past.

The gap continued to grow between toll revenues, slightly declining due to COVID-19 in FY20, and HTA's operating costs, which have risen by 4% per year during the same period (Exhibit 45).⁷³ Since 2015, HTA has offset its deficits with transfers from the Commonwealth and reallocation of capital expenditure funds to operational expenditure accounts. This approach prevents HTA from achieving its capital delivery targets and depletes funds that could otherwise be used and are necessary to improve the transportation system.

Lack of investment leads to an inability to properly maintain roads, thus inhibiting economic growth in Puerto Rico. The increasing gap between toll revenues and operating expenses only further highlights the importance of implementing initial fare increases to make up for the lack of revenue in recent years.

⁷³ Per the 2020 Certified Fiscal Plan.

Exhibit 45: Comparison of toll revenues and operating expenses, FY18-21



To make up for these deficits, catch up with inflation since 2005, and compensate for the lack of increases in FY20 and FY21, fares must increase at a higher rather for the next three years of the Fiscal Plan. For FY22 to FY24, HTA must increase fares by 8.3% every year to compensate for and “catch up” with the lack of increases. By FY25, the annual increase will diminish to CPI plus an additional 1.5%. This growth rate is consistent with the allowed annual increase for roads under concessionaire agreements in Puerto Rico and would bring in approximately \$2.8 billion in additional revenues from FY22 to FY51. The impact of fare increases on HTA’s revenue is shown in Exhibit 46.

In the event that other revenue-generating measures are identified that generate an impact incremental to the estimates contained in this plan, any impact over-and-above the levels estimated in this fiscal plan could be used to offset a portion of these toll fare increases.

Increased fares would allow HTA to make up for foregone revenues from the last two fiscal years and strengthen its toll road network. A prompt increase to account for historical inflation and non-implementation of fare increases will improve HTA’s ability to cover its operating expenses and invest in the safety and quality of the road network. Price elasticity of toll roads suggest that, in the short term, demand will remain inelastic. In the long term, the Fiscal Plan assumes highly inelastic demand (0.05), consistent with both

academic research and case studies of Puerto Rico's demand for toll roads.^{74,75} Furthermore, Metropistas-operated roads, which have a similar schedule of increases,⁷⁶ demonstrate better road quality and increasing traffic. As of May 2021, less than 1% of PR-22's pavement is in "poor" condition, compared to 12% of Puerto Rico's interstate system as a whole.

Based on these assumptions, Exhibit 46 and Exhibit 47 demonstrate revenues and traffic volumes forecasted over time.

Exhibit 46: Additional revenue from toll fare increases, FY22-51

Additional revenue brought in by toll fare increases, \$M

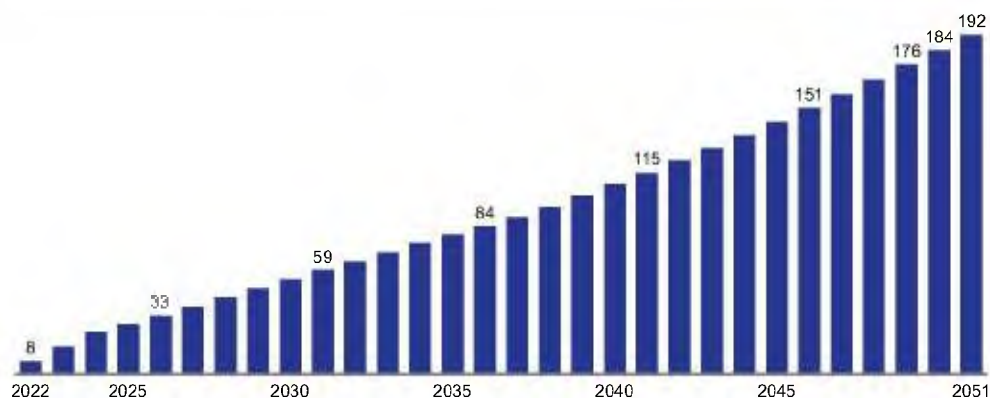


Exhibit 47: Impact of toll fare increases on toll prices, FY22-51

Average toll price¹ (USD)

Road	Plaza	Current	FY2025	FY2030	FY2035	FY2040	FY2045	FY2051
PR-20	Guaynabo	0.75	0.98	1.14	1.33	1.56	1.84	2.25
PR-52	Ponce	0.75	0.98	1.14	1.33	1.56	1.84	2.25
PR-53	Hucar	1.00	1.31	1.52	1.77	2.08	2.45	3.00
PR-66	Rio Grande	1.00	1.03	1.20	1.39	1.63	1.93	2.36

¹ For PR-20, PR-52, and PR-53, fares shown are based on current rates for Class 1 vehicles projected to grow by CPI+1.5%, with three years of additional increases of approximately 7% for "catch up" from non-increases in FY20 and FY21. For PR-66, fares increase at a rate of CPI+1.5% beginning in FY25.

⁷⁴ Pricing for toll roads is a function of the elasticity of the demand for travel. Demand in the absence of alternative routes of similar quality and availability, especially during peak times, remains relatively stable in the short term and slightly lower in the long term as a result of changing traffic and commuting patterns over time. As such, Puerto Rico's toll road fares are projected assuming greater inelasticity per the assumptions laid out by FHWA in its study, "Economics: Pricing, Demand, and Economic Efficiency."

<https://ops.fhwa.dot.gov/publications/fhwahop08041/fhwahop08041.pdf>

⁷⁵ For example, a ~43% toll fare increase across toll plazas in 2005 yielded a 50.4% growth in revenues for HTA between 2005 and 2007, highlighting limited relative impact on demand.

⁷⁶ Metropistas operates roads with a CPI plus additional 1.5% schedule of annual increases.

In order to implement toll fare increases and reflect the financial impact projected above, HTA must follow the timeline in Exhibit 48 to ensure proper implementation of the toll fare increase fiscal measure.

Exhibit 48: Toll fare increase implementation

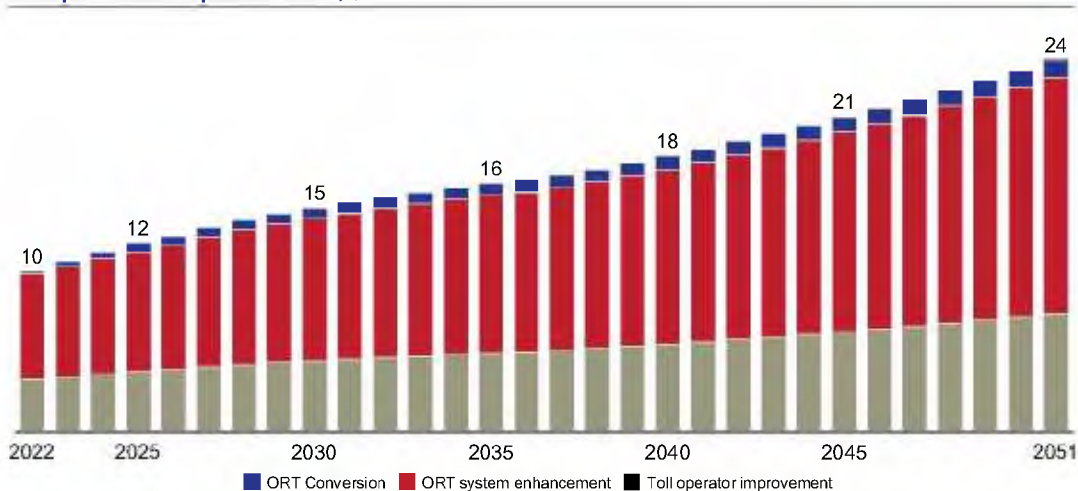
Measure	Action item	Responsible party	Deadline
Implement toll fare increases	Hold sessions informing public of upcoming fare adjustments	HTA	November 1, 2021
	Increase toll fares in line with the Fiscal Plan	HTA	January 1, 2022
	Implement recurring toll fare increases at end of each Fiscal Year	HTA	January 1, 2022-2051

Optimizing fare collection

The Fiscal Plan's requirements for optimizing fare collection by installing new tolling systems and simultaneously expanding Open Road Tolling (ORT) is also expected to increase toll revenues. Optimizing tolls and expanding ORT will require an investment of approximately \$55 million in capital expenses from FY22 to FY25. This figure will be fully offset by the additional toll revenues that the optimized fare collection will generate over the next 30 years (approximately \$511 million), as seen in Exhibit 49 below.

Exhibit 49: Impact of toll optimization on fare revenue, FY22-51

Toll optimization impact on fares¹, \$M



¹ Assumptions: ORT Conversion impact: 2% revenue increase for all affected parts of the network / ORT system enhancement impact: 1% revenue increase / Toll operator improvement: 2% revenue increase

In 2018, HTA appointed a temporary operator for a transition period of 18 months and initiated a process to select a permanent operator for all toll roads. The procurement process of the operator is subject to the outcome of the ongoing legal proceeding related to the original Request for Proposal (RFP). However, HTA has worked with the existing provider and is moving forward with optimization measures while the litigation is resolved. The permanent operator will install new systems that increase the reliability and speed of transaction processing and account balance maintenance, better track toll violations, and ensure data collection complies with all relevant security protocols.

Thus far, HTA has made initial progress on toll optimization measures. The ORT plazas at Juana Diaz and PR-66 have already been upgraded and reflect increased quality and accuracy of toll collections. Furthermore, HTA has launched a mobile customer interface and app to improve service delivery options. During Q3 of 2021, merchant fees at replenishment lanes will be replaced, creating additional savings. However, while some progress has been made, HTA must diligently follow the timeline outlined in Exhibit 50 to ensure that toll optimization measures are completed and to enhance toll fare revenue beginning in FY22.

Through implementation of toll optimization measures, HTA expects several outcomes. For users, HTA hopes to deliver increased reliability and speed in transaction processing and account concerns, as well as new customer-friendly channels to increase registered accounts. These channels are also expected to reduce violations. Furthermore, HTA plans to enact a Payment Card Industry-compliant (PCI) system, as well as transparency between the lane and back offices, optimizing transaction capture and recording.

Exhibit 50: Required Implementation Actions for optimizing toll fare revenue

Measure	Action item	Responsible party	Deadline
Optimize toll fare revenue	Introduce optimized electronic fare collection system	HTA	July 31, 2021
	Issue RFP for new toll operator	HTA	September 30, 2021
	Select new toll operator and begin contract negotiations	HTA	February 28, 2022
	Finalize new operator contract and submit for FOMB review	HTA	April 30, 2022
	Begin P3 of toll highways under new contract	HTA	June 30, 2022
	Begin expansion of Open Road Tolling	HTA	June 30, 2022

10.2) Implementing bi-directional tolling

In FY22, HTA must implement bi-directional tolling in eight locations of PR-52, PR-53, and PR-20 to reduce toll fare leakage, follow best practices, and ensure equitable fare collection for each trip.⁷⁷ Uni-directional tolling was initially implemented by HTA in the late 1990s to streamline manual tolling; however, the adoption of ORT through the installation of bi-directional gantries will allow HTA to improve compliance and equity with fare collection, including reducing leakage (e.g., users of toll roads who circumvent toll plazas). The benefits from bi-directional tolling will outweigh the initial capital and ongoing operating costs. Bi-directional tolling is common practice in both Puerto Rico concessionaire-operated roads and U.S. peer systems.

The following seven locations are identified for bi-directional tolling:

- PR-52 Caguas Norte
- PR-53 Ceiba
- PR-53 Humacao Norte
- PR-53 Humacao Sur
- PR-53 Hucar (Salinas)
- PR-20 Guaynabo
- PR-9⁷⁸

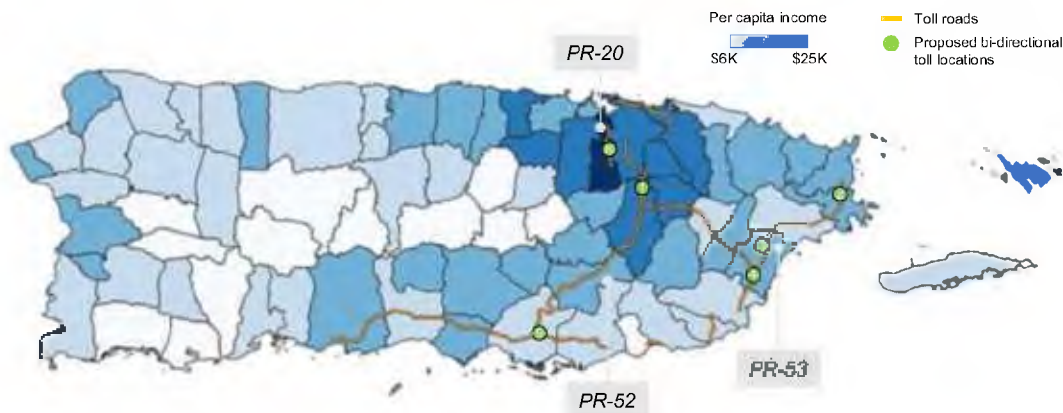
The tolling locations above, aside from PR-9, have historically made up approximately 12.8% of HTA's toll fare revenues.⁷⁹ Implementation of a bi-directional toll fare schedule for these locations will consider a balance of factors, including income, commuting behaviors, average trip length, and operating expenses. Bi-directional tolling is expected to accrue \$8 million in additional revenues by FY24, notwithstanding \$30 million in capital investment costs to install gantries over FY22 to FY24. Over the period of the Fiscal Plan, bi-directional tolling is expected to increase toll fare revenues by \$189 million due to reduced leakage and improved system efficiencies.

⁷⁷ <https://metropistas.com/los-porticos-bidireccionales-de-la-pr-22-y-la-pr-5-entran-en-operacion/>

⁷⁸ Not currently tolled; will be newly tolled with bi-directionality.

⁷⁹ Based on FY20 actuals of monthly revenues in each of the six tolling locations.

Exhibit 51: Map of HTA's proposed bi-directional tolling locations



To further analyze bi-directional tolling in these locations beyond financial impact estimates, HTA must estimate revenues based on transaction volume, required capital costs, and user costs using traffic studies conducted by an external service. Following the identification of toll plazas that meet tolling requirements, HTA must complete an RFP, install equipment, and begin bi-directional toll collection. Bi-directional tolling is set to begin in the third quarter of FY22.

Following the implementation of bi-directional tolling, HTA should experience an improvement in system efficiencies and an increase in toll revenues. HTA must use the opportunity for implementation to replace obsolete equipment, improve availability of spare parts, and reduce downtime at the roadside system level. On the financial side, bi-directional tolling is anticipated to reduce toll revenue leakage and reduce transaction costs due to an increased volume of transactions. Implementation of the required steps below will allow HTA to progress towards achievement of the aforementioned outcomes.

Exhibit 52: Required implementation actions for bi-directional tolling

Measure	Action item	Responsible party	Deadline
Implement bi-directional tolling	Procurement of a third-party consultant to conduct traffic studies for proposed locations	HTA	Complete
	Completion of study with cost-benefit analyses and recommendations for plazas	HTA	In progress
	Roadside equipment (RSS) request for proposal published	HTA	June 30, 2021
	Note to proceed per RSS request for proposal	HTA	October 31, 2021
	Phase 1: Collection begins for ~6 plazas	HTA	April 1, 2022

Measure	Action item	Responsible party	Deadline
	Phase 2: Collection begins for up to ~7 plazas	HTA	May 1, 2022

10.3) Increasing toll fines, introducing a tiered fine system, and optimizing fine collection

Optimizing fine collection

HTA must resume electronic toll fine collection on July 1, 2021. Historically, HTA's fine collection rate has been approximately 60%, adjusting for the current collection rate of 0% since September 2018 due to delays in restarting the system after the Executive Order that suspended toll fine collections. Given that HTA did not resume collection in FY21, HTA lost an estimated \$17 million in fine collection revenues; any further monthly delays to the current date of resumed collection will cost HTA between \$3 to \$5 million per month in missed revenues. To ensure the fiscal targets contained in this Fiscal Plan are met, HTA must also implement measures to optimize toll fine collection. HTA expects that implementation of the new toll operation system will increase the fine collection rate and shorten the fine collection lifecycle⁸⁰ from 18 to 12 months. These improvements are projected to generate \$55 million in additional revenue over the next five years (FY22-26) and \$328 million through FY51. Toll fine optimization improvements are also projected to generate \$19 million of cost savings through FY51, given that the new system will reduce HTA's dependence on physical fine enforcement mechanisms.⁸¹

Increasing toll fines and introducing a tiered fine system

To achieve the fiscal targets contained in this Fiscal Plan and ensure that its operations are adequately funded, HTA must increase its fine rates in line with inflation and implement a tiered fine system to reward early payment. Increasing fine prices in line with inflation (to the closest multiple of \$1) would align with both the scheduled increases in toll fares and the Federal Civil Penalties Adjustment Act of 2015. Fine increases would consequently encourage drivers to avoid penalties and minimize nonpayment of fines. Furthermore, implementation of a tiered fine payment system will follow the best practices of other U.S. states.⁸² The system shall incrementally increase fines for all violations that go unpaid for over six months.⁸³ The tiered system is expected to reward timely payments and penalize late payment. These two measures are projected to generate

⁸⁰ Fine collection lifecycle: amount of time it takes for fines to be collected.

⁸¹ E.g., letters notifying violators that fines are pending after several months of nonpayment

⁸² In Virginia, for example, unpaid fines double after 2 months and increase eightfold after 4 months.

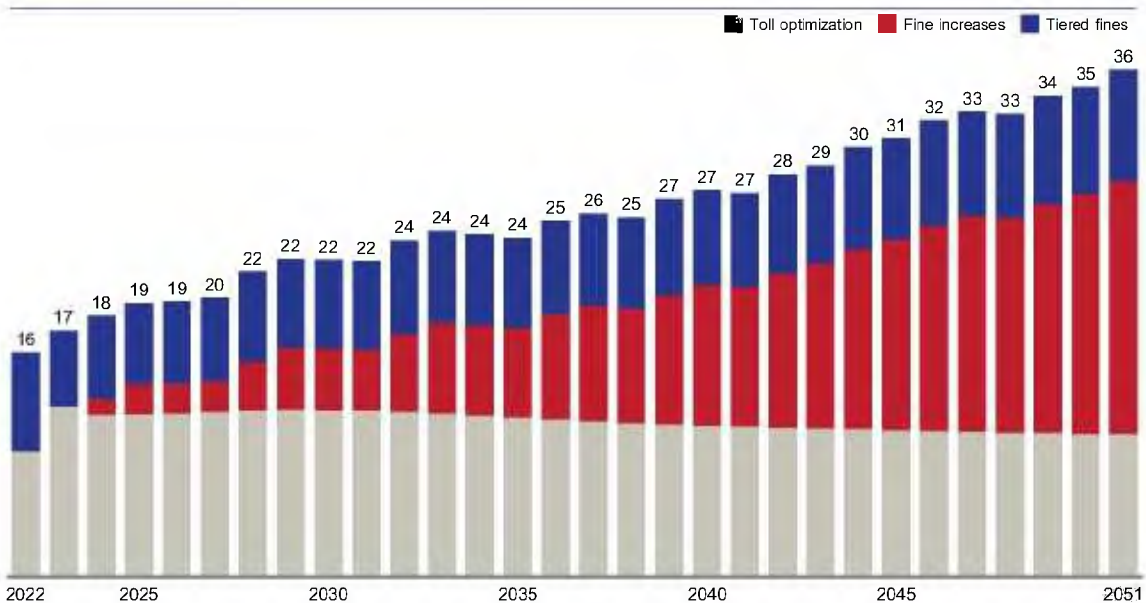
⁸³ For the purposes of this Plan, HTA has assumed that fine prices would double after a violation remains unpaid for six months. The simplicity of the tiered system structure would ensure straightforward implementation.

\$35 million in additional fine revenue over the first five years (FY22-26) and \$444 million by FY51 (Exhibit 53).

Legislative action is required before HTA can implement toll fine increases and establish a tiered toll-fine structure. To help HTA implement these strategies by Q4 of FY22, HTA and the Commonwealth Government must collaborate to develop the necessary legislation and support its approval by no later than February 28, 2022.

Exhibit 53: Impact of toll fine measures, FY22-51

Financial impact of toll fine measures FY22-FY51¹, \$M



1 Option A (current fine price level) assumes that all measures that exist in the previous fiscal plan (e.g. collection rate optimization) are fully implemented
2 Lost revenues for each month of delay to July 2022 fine collection, assuming a system with fully implemented fiscal measures (tiered system, toll optimization).

Exhibit 54: Required implementation actions for increasing toll fine revenue

Measure	Action item	Responsible party	Deadline
Increase toll fine revenue	Resume fine collections with optimized electronic fine collection system	HTA	July 31, 2021
	Develop draft legislation for tiered fine system/ fine inflation increases and submit for FOMB review	Commonwealth	August 30, 2021
	Approve Law enabling fine price modifications	Commonwealth	November 30, 2021

Measure	Action item	Responsible party	Deadline
	Introduce tiered fine system	HTA	February 28, 2022
	Implement recurring toll fine increases at end of each Fiscal Year	HTA	March 31, 2022

10.4) Improving ancillary revenues

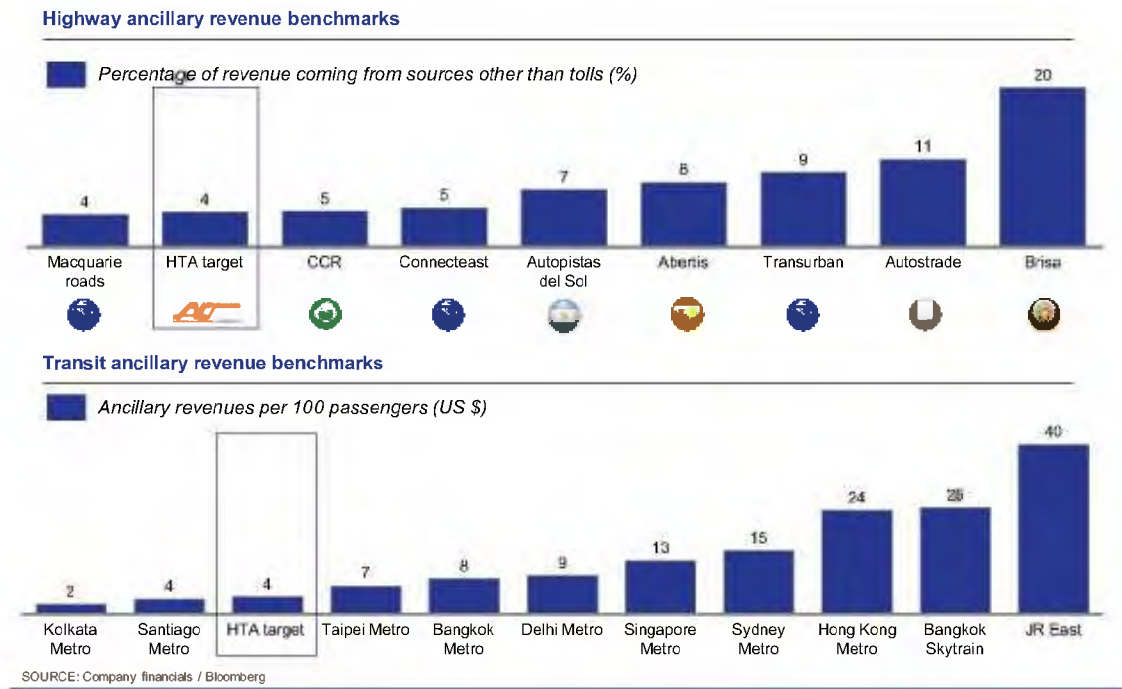
HTA has been implementing strategies over the last year to generate ancillary revenues. Implementation thus far has focused on disposing of real estate assets. However, this strategy cannot continue over the long run, because it would deplete most of HTA's real estate portfolio.

Despite the temporary ancillary revenue decline in FY21 due to COVID-19, HTA expects to generate \$1.4 million a year from FY22 to FY26, primarily as a result of the sale of a majority of HTA's non-core assets. A third-party contractor will determine whether properties being considered for sale could sustain long-term, repeating revenues prior to being sold in the short term. The contractor will also identify the activities that will allow for short-term revenues to be pursued. Future asset sales will be considered as HTA continues to identify and liquidate available properties; however, property and asset sales are not a sustainable source of revenue that can be relied on in the long term.

HTA has also identified suggestions for sustainable, repeatable sources of ancillary revenue that will eventually become a majority of HTA's ancillary revenues. For example, HTA is in process of developing a plan to hire a third party to manage Tren Urbano parking operations. While revenue opportunities would be limited, HTA would offset approximately \$1.5 million in operating expenses related to maintenance. HTA is also currently evaluating a proposal for the construction of fiber optic communication infrastructure along the PR-5 and PR-22 toll roads, which would improve the overall resiliency of Puerto Rico's communication network, while also providing additional non-toll revenue to HTA. This project is in the initial stages of evaluation, but early estimates suggest potential yearly revenues for HTA between \$0.7 and \$3.1 million and margins of 20%.

Emulating peer transit systems that have explored diversified ancillary revenue opportunities (e.g., advertising, space rentals, real estate development) would further allow HTA to increase its ancillary revenues sustainably.

Exhibit 55: Benchmarks of ancillary revenue performance



To achieve the fiscal targets contained in this Fiscal Plan, and ensure its operations are adequately funded, HTA must increase Tren Urbano's ancillary revenues by:

- **Real estate leasing and development (as opposed to direct sale):** HTA should maximize retail business spaces at the Tren Urbano stations by renting available spaces. HTA must plan to explore the development of HTA-owned properties near Tren Urbano stations. To maximize the attractiveness, safety, and traffic in these areas and encourage Tren Urbano ridership, HTA must collaborate with the private sector. This will increase fare revenues and generate a passive income stream from rentals.
- **Advertising:** HTA plans to maximize advertising revenue by installing advertisements in different locations within Tren Urbano stations (e.g. platform walls and pillars) its fleet, and materials (e.g. tickets and rail cars). It must outsource advertising management to a private agency that is an expert in attracting advertisers.

HTA must also increase the ancillary revenues of its highway operations by exploring:

- **Real estate development or rentals:** HTA must partner with private companies to build and operate highway-side facilities (e.g. service stations, hotels, and gas stations), to boost its income from real estate. The concessions shall be structured so that the concessionaires pay either a lump sum payment at the beginning or a recurring annual payment on the basis of the rents they collect from

these facilities. HTA must also enhance its existing service stations with improved services that will enhance the experience at and revenues from the stations.

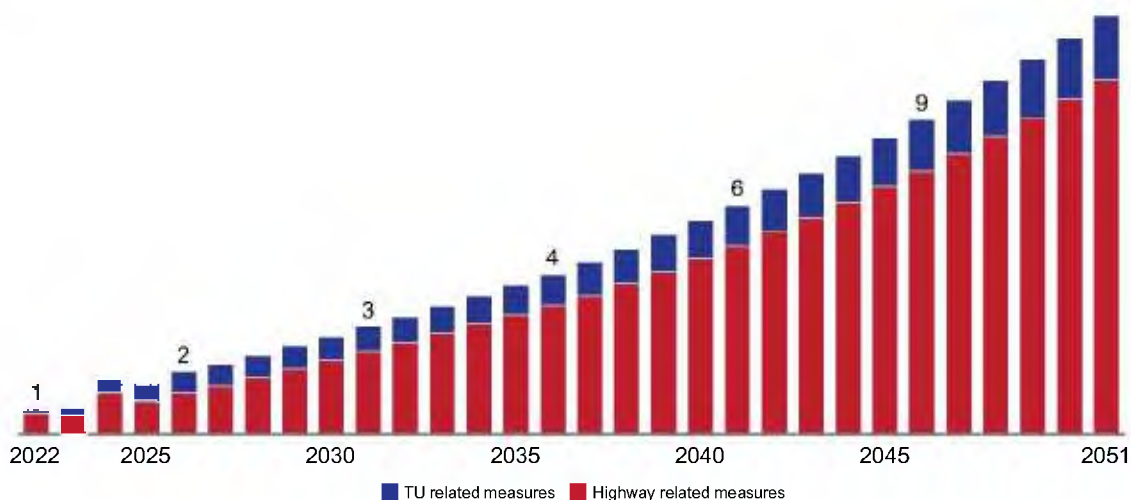
- **Advertising:** HTA must install advertisements on billboards, road signs, and toll plazas in a manner that complies with the federal and local legal limitations on Out of Home (OOH) advertising.

HTA must also evaluate other high-impact opportunities that may currently face legislative or administrative constraints and explore ways to maximize its revenues within those constraints. HTA must launch an RFP to develop a P3 for new revenue share mechanisms for broadband and telecommunications, potentially charging utility companies for access to Right of Way (ROW) land plots near highways and Tren Urbano tracks. Exhibit 56 highlights the combined benefits of these activities.

If HTA were to collect ancillary revenue similar to successful peer benchmarks per a moderate scenario,⁸⁴ it could increase its ancillary revenues by \$6.1 million through FY26 and by \$156 million through FY51.⁸⁵ In order to meet these targets, HTA must invest approximately \$0.4M per year (adjusted for inflation) from FY22 onwards in an ancillary revenue management team.

Exhibit 56: Impact of ancillary revenue measures, FY22-51

Ancillary revenue measures impact¹, FY22-51, \$M



¹ Assumptions: TU ancillary revenue measures are designed to help HTA's TU operations attain \$4.14 per 100 passengers by FY2025 / Highway ancillary revenue measures are designed to help HTA's highway operations become 4.4% of toll revenues by FY2025 / Both targets assume that TU ridership and toll revenues would increase due to the implementation of the fiscal measures included in this Plan (e.g., transit enhancements, fare increases) / Numbers for highway measures incorporate impact of planned investment (~\$0.4M / year)

⁸⁴ Assumptions include target revenues to be 5.1% of toll revenues, based on FY21 data, and a target non-farebox revenue per 100 passengers to be \$5.64.

⁸⁵ Targets are based on HTA maintaining the following ratios stable at their FY21 levels: Tren Urbano anc. revenues / Tren Urbano passengers & Highway anc. revenues / Toll fare and fine revenues. Keeping these ratios stable while increasing Tren Urbano ridership and toll revenues (thanks to other fiscal measures) would push HTA to substantially increase its ancillary revenues as well.

Exhibit 57: Required implementation actions for improving ancillary revenue

Measure	Action item	Responsible party	Deadline
Improve ancillary revenue	Hire ancillary revenue management team	HTA	December 31, 2021
	Begin a campaign to increase ancillary revenue through short-term gains (e.g., advertising)	HTA	February 28, 2022
	Begin coordination with third parties for ancillary revenue increases that require contracting (e.g., rentals)	HTA	March 31, 2022
	Begin ancillary revenue increases that require long-term planning and complex legal agreements (e.g. joint real estate development initiatives)	HTA	June 30, 2022
	Develop a comprehensive ancillary revenue strategy, which will include a full asset inventory and an analysis of administrative constraints and submit to FOMB for review	HTA	June 30, 2022

10.5) Expanding transit fare revenues

Historically, Tren Urbano has underperformed its peer small metro transit authorities in medium-sized U.S. cities. In FY17, before Hurricane Maria, Tren Urbano's Farebox Recovery Ratio (FRR), the ratio of operating revenues to operating expenses, was approximately 15%, falling to approximately 11% in FY19, compared to 25% (the approximate equivalent ratio peer systems).⁸⁶ At the same time, Tren Urbano's ridership has fallen to ~5.4 million passengers annually, well below peer systems such as Staten Island's SIRTOA, which has an annual ridership of ~10.7 million passengers.⁸⁷

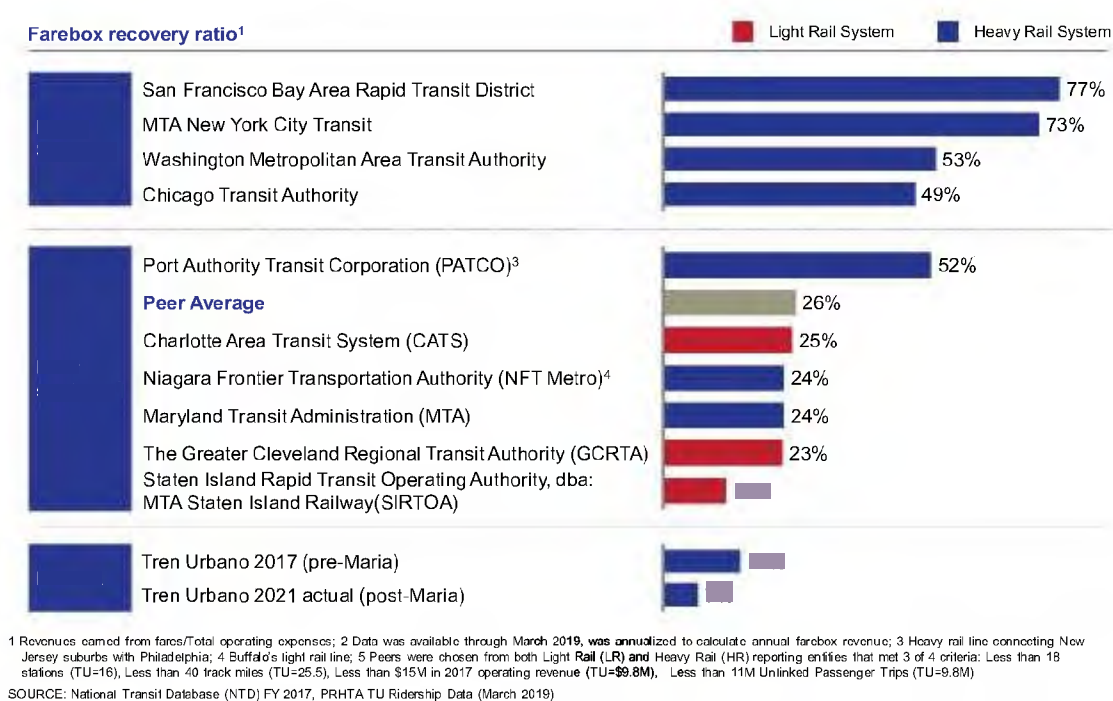
The low FRR and ridership metrics are driven by TU's difficulty in attracting riders, which stems from several factors: technical infrastructure problems (e.g., malfunctioning POS

⁸⁶ Excluding operating subsidies from FTA. Peer benchmarks come from the National Transit Database (NTD). See <https://www.transit.dot.gov/ntd/ntd-data>. Peers were chosen among Light Rail and Heavy Rail entities that met three of four criteria: Less than 18 stations, Less than 40 track miles, Less than \$15M in 2017 operating revenue, and / or Less than 11M Unlinked Passenger Trips.

⁸⁷ Public Transportation Ridership Report, American Public Transportation Association, Found online at: <https://www.apta.com/wp-content/uploads/2018-Q4-Ridership-APTA.pdf>.

machines), little integration between the Tren Urbano and San Juan's other public transit systems (e.g., PRITA buses and the ATM ferry), and riders' tendency to use private vehicles or transportation networks (e.g., públicos). The impact of COVID-19 compounded the low ridership issues from years prior, with a sharp decrease in riders that has not yet returned to pre-pandemic levels.⁸⁸ Because of these factors, Tren Urbano's FRR fell to approximately 7% in FY21.

Exhibit 58: Comparison of Tren Urbano FRR with Peer Transit Systems



By improving service, HTA could raise ridership. It increased ridership caused Tren Urbano's FRR to rise to approximately 25.8%, a performance similar to peer systems, HTA's revenues would increase by approximately \$30 million by FY26 and about \$368 million cumulatively by FY51.⁸⁹ It would also decrease the average commute time in San Juan, thus increasing labor productivity and mobility while reducing the individual burden and environmental impacts of private-vehicle ownership.

To attain this FRR, HTA must enhance revenue in two categories: (i) improvements it can directly implement; and (ii) improvements where HTA must collaborate with other public or private entities (e.g., integration with AMA buses and Públicos).

HTA must directly implement the following improvements:

- **Point of Sale system repair:** The fare collection system is an integral part of the public transportation system. The fare collection software and back office systems

⁸⁸ Globally, most transit systems have ridership between 1/3 and 2/3 of their pre-pandemic ridership levels.

⁸⁹ Gap of remaining 5% could be closed by implementing cost reductions.

have remained the same since Tren Urbano began operations in 2005, which now results in operational challenges for HTA. Following the hurricanes of 2017, 25% of ticket vending machines and 49% of passenger barriers were in operating condition; this reflects the current status of the system. The Automatic Fare Collection system (AFC) continues to operate in a state of severe post-hurricane degradation and limits the revenue stream and proper accountability. As a result of outdated POS systems, Tren Urbano riders cannot use debit or credit cards to purchase tickets, further decreasing revenue opportunity and ridership. HTA is hiring a contractor to repair the POS machines, and HTA projects the system will be fully operational by Q1 FY22. Once POS machines are reintroduced, Tren Urbano fare revenues are expected to increase by 10%, which will bring the system's FRR to approximately 11% (increasing revenues by \$48 million from FY22 to FY51).

- **Enhancement of Tren Urbano's rider rules:** To ensure the fiscal targets contained in this Fiscal Plan are met, HTA must ensure that Tren Urbano ridership rules encourage the use of public transit and address the needs of commuters who rely on Tren Urbano as their main mode of transportation.

To enable the achievement of the fiscal targets contained in this Fiscal Plan, implementation of measures to promote economic growth, and investment in the public transportation system, HTA must work closely with other transit agencies, government authorities, and private transport companies to carry out other initiatives (see Exhibit 60 for timeline):

- **Integrating public transit systems and agencies:** HTA must collaborate closely with other public transit agencies (e.g. ATM, AMA, PRITA) to integrate Tren Urbano's operations with their bus and ferry networks, set forth below. Leveraging existing capacity will allow HTA to more effectively drive up ridership and service quality gains. As part of this, HTA must:
 - Adopt a single farecard for all transit systems
 - Harmonize fares and schedules across Tren Urbano, buses, and ferries
 - Design a coordinated network of routes, creating high-frequency trunks with timed transfers to a useful branch network
 - Pool data to develop better scheduling and routing
 - Redesign the physical landscape around transit stations to make them more accessible for pedestrians and increase their visibility
- **Collaboration with private transport networks:** HTA also must collaborate more closely with private transport networks (e.g., públicos and ridesharing services), which carry approximately 21 million passengers per year.⁹⁹ The joint

⁹⁹ "Annual unlinked trips by Públicos", Puerto Rico Long Range Transportation Plan, p. 123, http://lrtp.steergroup.com.co/wp-content/uploads/2018/12/PR-Island-wide_FINAL.pdf.

implementation of fare integration, station redesign, schedule integration, and multi-modal trip planning capabilities between HTA and private transport networks would make transportation services more available and accessible and increase ridership.

- **Improving curb management practices:** HTA must work with the Commonwealth and local municipal authorities to promote innovative curb management practices (e.g., dynamic pricing for on-street parking, and replacing on-street parking with drop-off zones). These programs will encourage commuters to use public transit, decrease congestion, and increase Tren Urbano's revenues.
- **Promoting Transit-Oriented Development (TOD) around Tren Urbano stations:** HTA must identify regulatory requirements that prevent or impact the development of real estate near transit stations (e.g., zoning restrictions, setback requirements, parking minimums). HTA will then work with the Commonwealth and local municipal authorities to change regulations to facilitate TOD, increase community accessibility to public transport, and generate traffic near transit stations.

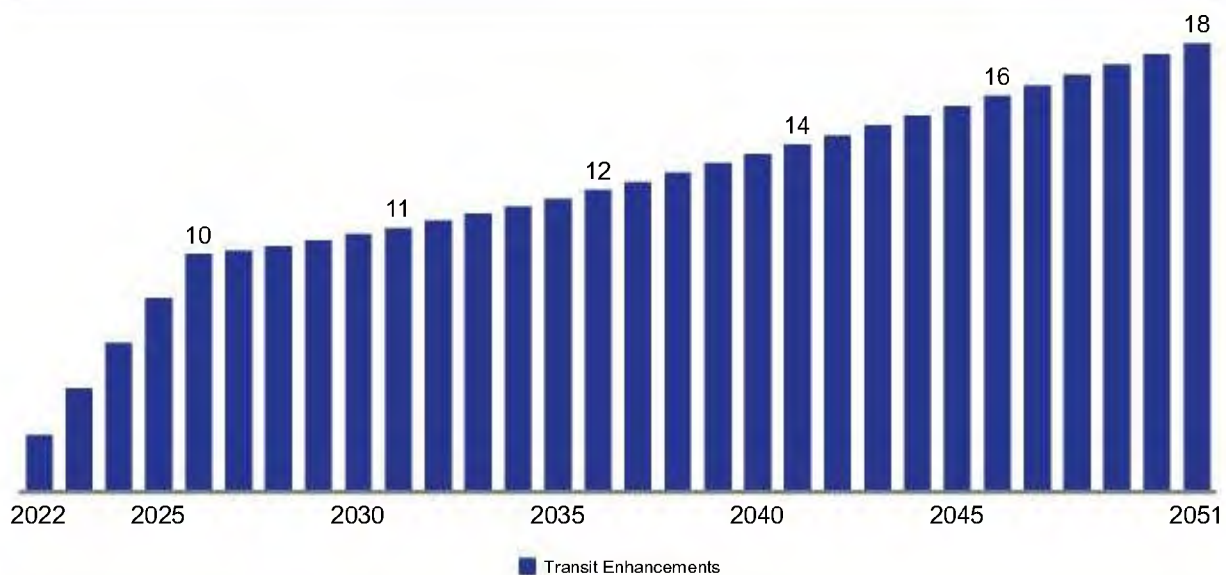
In line with the transportation sector reform, the implementation of these measures should begin with HTA, but happen in collaboration and as part of reform activities with PRITA.

Improved transit performance in the Commonwealth, and Tren Urbano in particular, can yield improved economic consequences. By improving the quality of transit operations, HTA decreases both the effective travel times of its users, as well as the travel times of all Puerto Rico residents, by encouraging a modal shift that contributes to decreases in road congestion. Furthermore, transit users are less likely to own vehicles or have other travel options, making increases in service quality a critical component to improving economic mobility for lower-income residents of Puerto Rico.

The implementation of these transit improvements will have multiple positive effects for Puerto Rico's broader community and for HTA. The improvements are expected to decrease the average commute time of San Juan residents, make workers more productive, improve mobility, and reduce the need to own a car. In doing so, the measures will increase Tren Urbano's ridership from approximately 3.8 million to 17 million passengers per year.

Exhibit 59: Impact of transit revenue expansion measures, FY22-51

Transit fare measures impact¹, FY22-51, \$M



¹ Assumptions: Transit enhancements are designed to raise the FRR of TU to ~20% (in line with peer standards) by FY2026

Exhibit 60: Required implementation actions for expanding transit revenues

Measure	Action item	Responsible party	Deadline
Integrate transit assets under a unified PRITA	Complete transfer of assets per transportation sector reform	HTA, ATM, PRITA, DTOP, and AAFAF	June 30, 2023
Integrate transit networks	Adopt single farecard across systems	HTA, ATM, and PRITA	June 30, 2022
	Harmonize fares, routes, and schedules across systems	HTA, ATM, and PRITA	December 31, 2022
	Begin partnerships with private transport networks	HTA, PRITA, Private networks	December 31, 2022
Promote TOD	Identify barriers that prevent denser development near transit	HTA, ATM, and PRITA	January 31, 2022
Implement TU improvements	Enhance TU ridership rules	HTA	September 30, 2022
	Complete repair of Point of Sale (POS) machines to enable credit card usage	HTA	June 30, 2022

10.6) Introducing new congestion management mechanisms

HTA is in the process of implementing dynamic toll lanes (DTLs) to reduce congestion. Baseline metrics have been developed and will be reported against to measure the efficacy of these initiatives and status of the overall initiative. HTA continues to implement the following measures:

- **Create new Dynamic Toll Lanes:** DTLs are created to charge different rates for toll road users depending on the time of use. The proposed DTLs will increase tolls for drivers during peak hours, motivating them to ride-share or use public transport. These lanes have been operational as of May 1, 2021 and are projected to generate net impact of approximately \$4.5 million in FY22 and \$185 million cumulatively by FY51.

Exhibit 61 shows the combined impact of DTL revenue, and Exhibit 62 shows their implementation timeline.

Exhibit 61: Impact of Dynamic Toll Lanes measure, FY22-51

Congestion management – DTL net impact, FY22-51, \$M

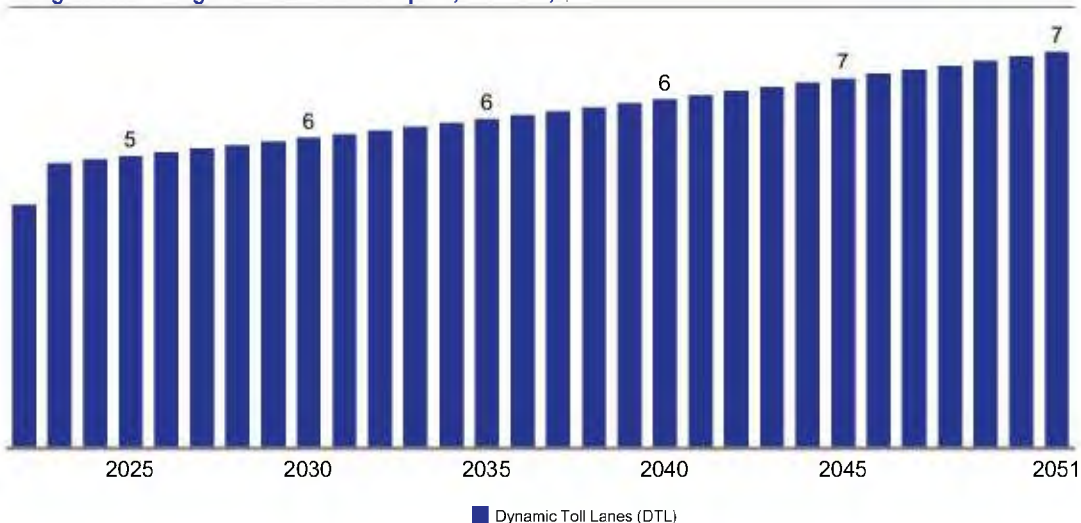


Exhibit 62: Required implementation actions for Dynamic Toll Lanes

Measure	Action item	Responsible party	Deadline
Introduce new congestion management mechanisms - DTL	Complete planned DTLs	HTA	December 31, 2021

10.7) Collecting more discretionary funds

HTA must be committed to increasing its success in obtaining discretionary funds with the most aggressive approach in its history.

Internal reorganization will incorporate new responsibilities to internal staff to formalize a grant management team. Planned steps to establish an internal team to collect funds are as follows:




- The current Deputy Executive Director will be appointed as Chief Discretionary Funds Officer (CDFO).
- The role of the Director of the Federal Affairs Liaison Office will be expanded to include service as the Deputy Discretionary Funds Officer (DDFO), focused on FHWA grants. The DDFO has been identified and will soon be appointed.
- The acting head of the Federal Coordination Office will also serve as Deputy Discretionary Funds Officer, with an emphasis on obtaining FTA discretionary grants.
- Both Deputies will spearhead the efforts to prepare HTA for maximizing participation in earmarked projects, which may be adopted by the new Congress.
- To complement the in-house Discretionary Fund team, HTA must contract a firm experienced in pursuing discretionary grants of USDOT and USHUD (two federal agencies through which HTA is eligible for grant awards).

There are several opportunities for HTA to increase its federal funding through discretionary grants. Community Development Block Grant (“CDBG”) funding⁹¹ should be the primary focus for HTA in the short term while HTA builds capacity and begins to address other grant opportunities. In the longer term, HTA should set a strategy to apply for larger federal grants. For instance, in March, the federal administration proposed the American Jobs Plan, a nearly \$2 trillion infrastructure plan to support roads, bridges, and public transit over an eight-year period. HTA is developing projects that could be eligible for the new discretionary grant program. If the Plan fails to pass, the project proposals can be funded by existing discretionary grant programs (e.g. RAISE, INFRA, CIG).

Obtaining discretionary funds requires close coordination with federal agencies. The Discretionary Funds team must closely coordinate with the local FHWA and FTA Offices, as well as with Congress. HTA’s Executive Director will coordinate with the Secretary of the Department of Transportation and Public Works to collaborate with both the Puerto Rico Office of Federal Affairs and the Office of the Resident Commissioner.

⁹¹ Community Development Block Grants are grants to states, cities, and counties to develop viable urban communities by providing decent housing and a suitable living environment, and by expanding economic opportunities, principally for low- and moderate-income persons. The program is authorized under Title 1 of the Housing and Community Development Act of 1974, Public Law 93-383, as amended 42 U.S.C. 5301 et seq. <https://www.hudexchange.info/programs/cdbg/>

Exhibit 63: Major sources of federal discretionary funds

Grant	Total national funds, \$M	Priorities	Eligible projects
	889	<ul style="list-style-type: none"> Supporting economic development and job creation to facilitate recovery from COVID-19 	<ul style="list-style-type: none"> Projects on the National Freight Highway Network (NHFN) Projects that add capacity to the National Highway System (NHS)
	1000	<ul style="list-style-type: none"> Enhancing safety, environmental sustainability and securing a state of good repair for surface infrastructure 	<ul style="list-style-type: none"> Road and bridge construction Public transportation projects Intermodal projects
	2800	<ul style="list-style-type: none"> Promoting mobility improvements, congestion relief and economic development 	<ul style="list-style-type: none"> Public transport infrastructure improvement and expansion (rolling stock acquisition, platform expansion, ROW acquisition)
<p>In addition to these grants, HTA could also pursue part of the \$18.5B CDBG-DR/MIT funds that are currently available for Puerto Rico in order to make highways / TU more resilient to natural catastrophes</p>			

SOURCE: www.transit.dot.gov  transit.dot.gov

HTA is seeking to secure discretionary grants worth approximately \$2.1 billion from FY22-51 to pursue a variety of projects, including the three strategic projects identified in Chapter 6. Exhibit 64 below shows the total amount of capital expenditures HTA would disburse each year if it successfully receives the full envelope of discretionary funds it is seeking. In reality, HTA is likely to get a much smaller fraction of these discretionary funds; due to this uncertainty, the amounts have not been included in the overall Fiscal Plan forecasts.

Exhibit 64: Expected capital expenditure impact with discretionary projections, FY22-51

HTA annual capital expenditure FY22-51, highways and transit, post-measures, \$M

— Total CapEx — Total CapEx, plus discretionary expenditure

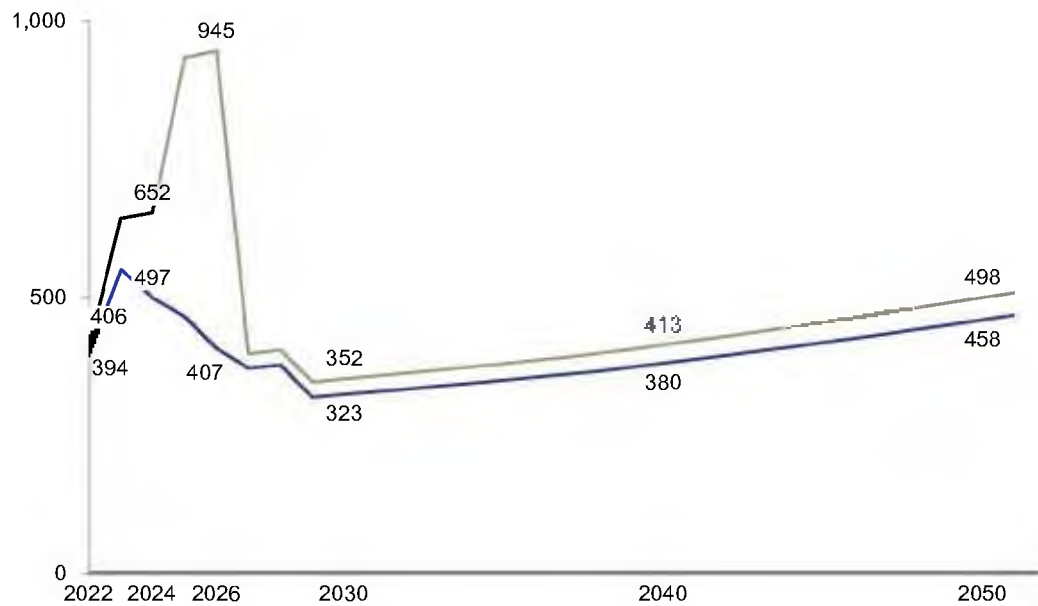


Exhibit 65: Required implementation actions for collecting more discretionary funds

Measure	Action item	Responsible party	Deadline
Collect discretionary grants	Hire discretionary grant management team	HTA	December 31, 2021
	Begin preparing discretionary grant applications and collecting all necessary supporting documents	HTA	March 31, 2022

CHAPTER 11: FISCAL MEASURES: OPERATING EXPENSE OPTIMIZATION

The following five fiscal measures will enable HTA to reduce its costs by approximately \$587 million over a 30-year period, thus delivering approximately 10% of the total fiscal measure impact:

1. Reducing pension costs in accordance with the Commonwealth 2021 Certified Fiscal Plan: \$42 million (~1%)
2. Reducing healthcare costs in accordance with the Commonwealth 2021 Certified Fiscal Plan: \$133 million (~2%)
3. Eliminating the Christmas bonus for HTA employees: \$18 million (~0.3%)
4. Reassessing Tren Urbano contracts: \$394 million (~7%)⁹²

HTA must also pursue one fiscal measure that has a cumulative cost of \$104 million:

5. Improving congestion management through implementation of Bus Rapid Transit and signal optimization

11.1) Reducing pension costs to meet the targets of the Commonwealth

To be consistent with the Commonwealth 2021 Certified Fiscal Plan and agreement reached with the Committee of Retirees in the Title III court, HTA must decrease pension expenses by up to 8.5% per year from July 1, 2022 onwards (Exhibit 66). The reductions will follow the structure of the adjustments made in the Commonwealth Certified Fiscal Plan, exempting those with monthly pension benefits of less than \$1,500 per month. HTA must not reduce anyone's monthly payments below this level. Per this reduction, HTA will save \$42 million in costs from FY22-51, which will help the Authority focus on improving Puerto Rico's infrastructure and providing services while eliminating structural deficits.

⁹² This figure is a target and will be subject to the outcome of a competitive bidding process.

Exhibit 66: Annual Pension Savings, FY22-51

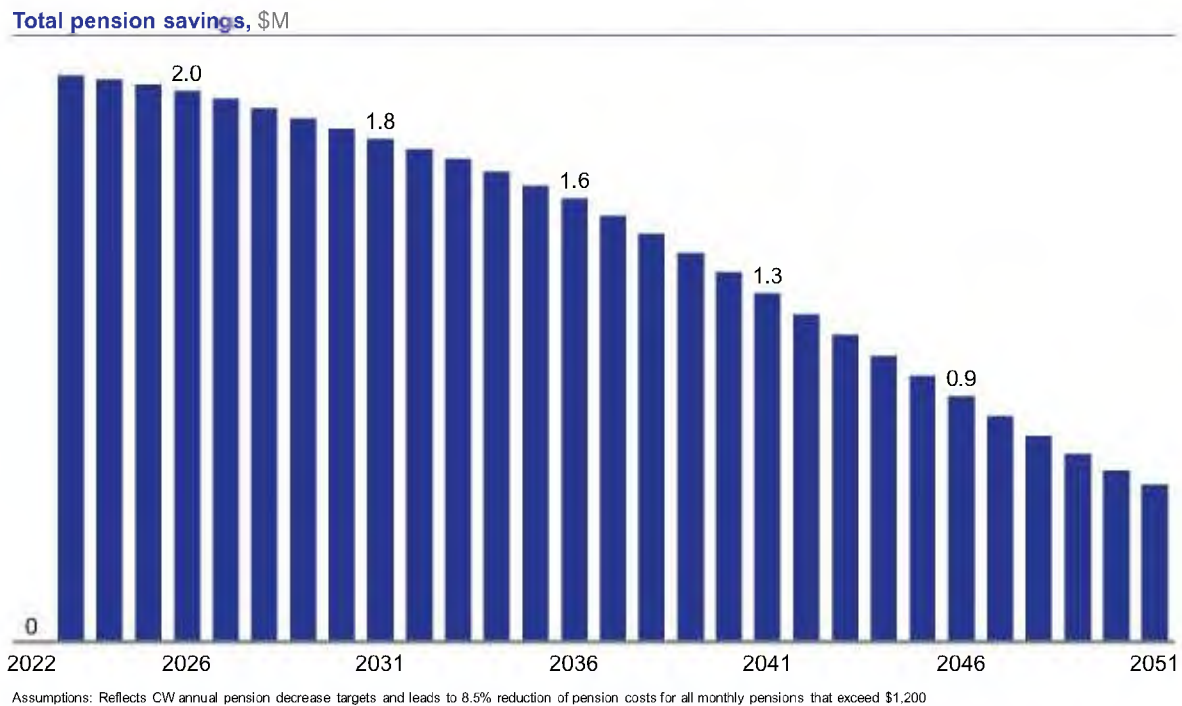


Exhibit 67: Required implementation action for reducing pension costs

Measure	Action item	Responsible party	Deadline
Reduce pension costs	Implement pension reductions of up to 8.5% for qualifying employees	HTA	December 31, 2022

11.2) Reducing healthcare costs

To eliminate structural deficits and enable the achievement of the fiscal targets contained in the Fiscal Plan, HTA must adjust the current health care plan for its employees so that it is consistent with the Commonwealth's uniform healthcare benefit policy. This measure assumes an average employer contribution of \$125 per employee per month for those who do not have preexisting conditions and \$450 per employee per month for all others. As a public corporation, HTA has the option to participate in the private insurance market in a manner similar to any private corporation in Puerto Rico. These figures will be adjusted for inflation over time. This measure will generate an average annual savings of \$4.4 million, or \$133 million in total savings for the 30-year Fiscal Plan period from Q3 FY22 until FY51.

Exhibit 68: Annual Uniform Health Savings, FY22-51

Total Annual Healthcare Savings, \$M

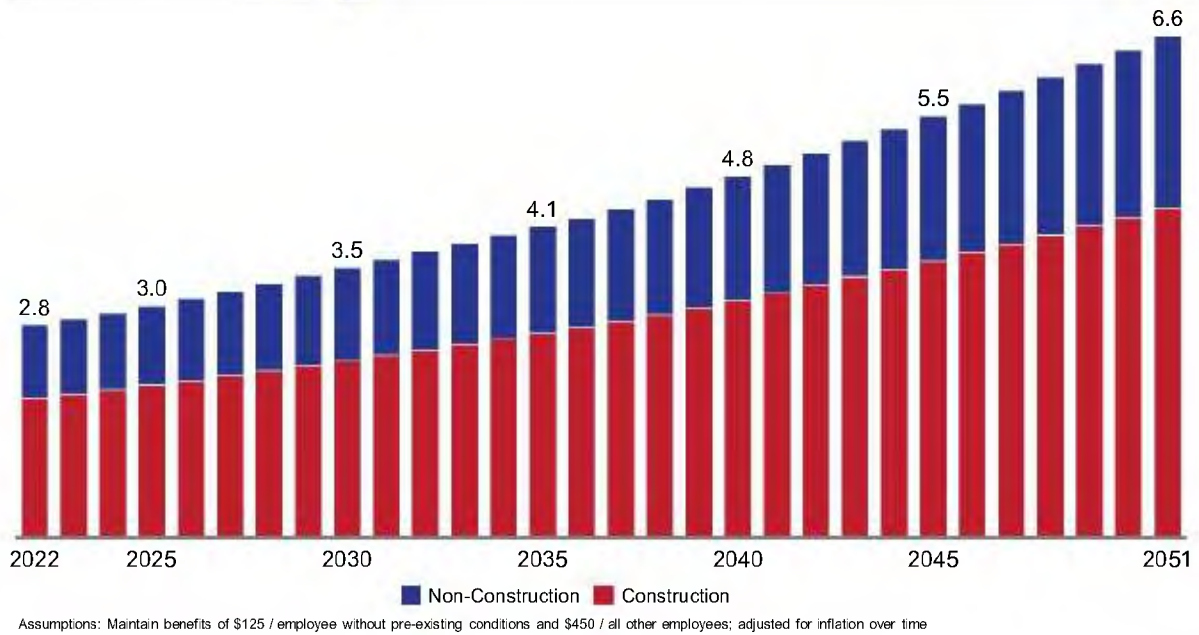


Exhibit 69: Required implementation actions for healthcare costs

Measure	Action item	Responsible party	Deadline
Reduce healthcare costs	Develop RFP to find and identify new healthcare provider consistent with certified budget	HTA	July 31, 2021
	Select new healthcare provider	HTA	September 30, 2021
	Finalize new healthcare insurance contract and submit to FOMB for review	HTA	November 30, 2021
	Begin new healthcare insurance contract	HTA	December 31, 2021

11.3) Eliminating the Current Christmas Bonus

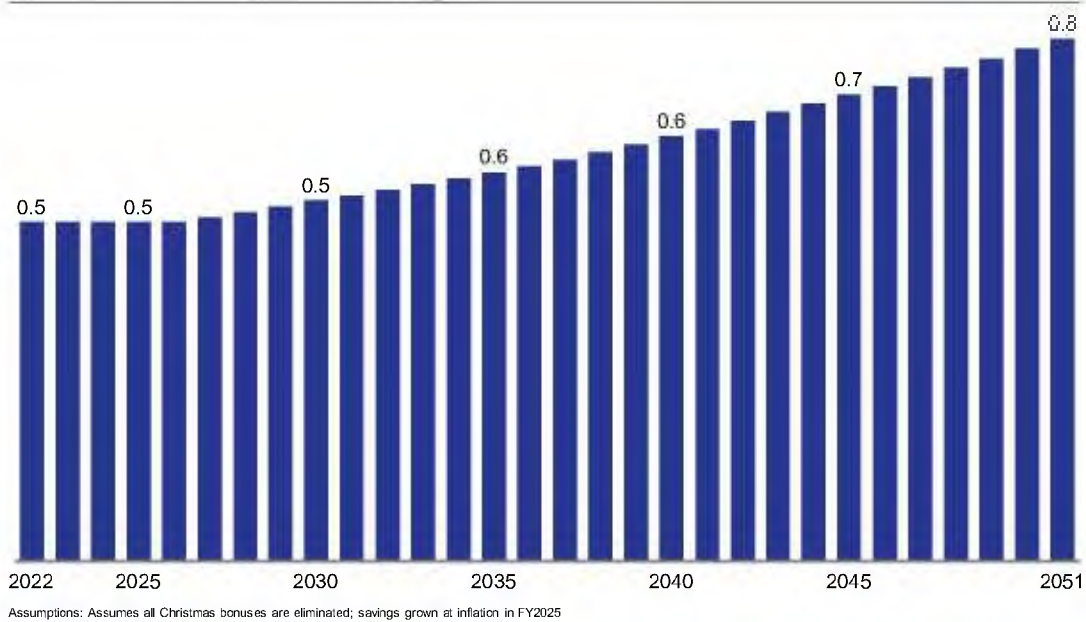
Given its current insolvency, HTA is presently unable to pay out a Christmas bonus to its employees. HTA shall eliminate the annual Christmas bonus to help eliminate structural deficits and enable the achievement of the fiscal targets contained in this Fiscal Plan. Eliminating the annual Christmas bonus will save an average of ~\$0.6 million per year from FY22 to FY51, with a combined total savings of \$18 million throughout this 30-year

time period. The estimated savings include the impact of inflation-based increases post-FY26.

In keeping with the Commonwealth Certified Fiscal Plan, if HTA is able to identify additional savings beyond those included in this Fiscal Plan, savings could be used to fund the payment of a Christmas bonus, provided that doing so does not cause HTA to exceed the operating cost estimates contained within this Fiscal Plan.

Exhibit 70: Christmas bonus elimination savings, FY22-51

Annual Christmas Bonus Elimination Savings, \$M



11.4) Reassessing Tren Urbano contracts

HTA's operating budget includes major, long-term operating contracts that support transit, design and construction, and other functions. At present, TU contracts exceed cost benchmarks from peer systems and past procurements. These contracts are frequently above benchmark because the contracts: (i) do not reflect HTA's current operating environment; (ii) include outdated fuel cost estimates; (iii) price in the risk of nonpayment from HTA; and (iv) are longstanding agreements that have been extended without modifying for the prior considerations.

At present, TU has a contract with ACI to operate and maintain Tren Urbano. The duration of the contract is 15 years, from 2017 to 2032, with the possibility of extending for two more 5-year periods. The contract includes a base compensation of \$57.5 million annually, which covers labor; utility aside from electricity; low-cost repairs; security; maintenance of tracks, vehicles, facilities, and equipment; customer relations, and fare collection, amongst other responsibilities. Furthermore, HTA pays additional

compensation of \$1.5 million a year to cover heavy maintenance, re-engineering of parts, and additional purchases of spare parts. The contract does not cover capital improvement overhaul programs, which are funded by HTA grants, electricity payments, or insurance costs.

In accordance with HTA's status under Title III of PROMESA, HTA has the opportunity to request improved terms from individual contracting partners or re-bid outdated contracts through solicitation. If HTA's main operating contract⁹³ matched peer system spend per track mile or VRM, HTA would witness an annual savings opportunity of up to 58%, or \$32 million a year.⁹⁴ Outside of the base contract additional areas of greater expense to HTA are insurance and utilities. Although costs must be a primary concern, new contracts must also increase performance standards and counterparty accountability for providing better services. Such agreements can improve HTA's standing and enhance Tren Urbano's farebox recovery ratio to fall closer in line with peer transportation systems.

As HTA's financial operations improve under new leadership, and in accordance with FHWA MOU requirements and this Fiscal Plan, HTA must strengthen the case for reduced cost of risk and will negotiate with vendors to improve Tren Urbano contract terms that reflect current circumstances. Tren Urbano may be transferred to a transit authority per the transportation sector reform; however, so long as TU is under HTA's purview, HTA shall consider the possibility of contract negotiation with the transit operator.

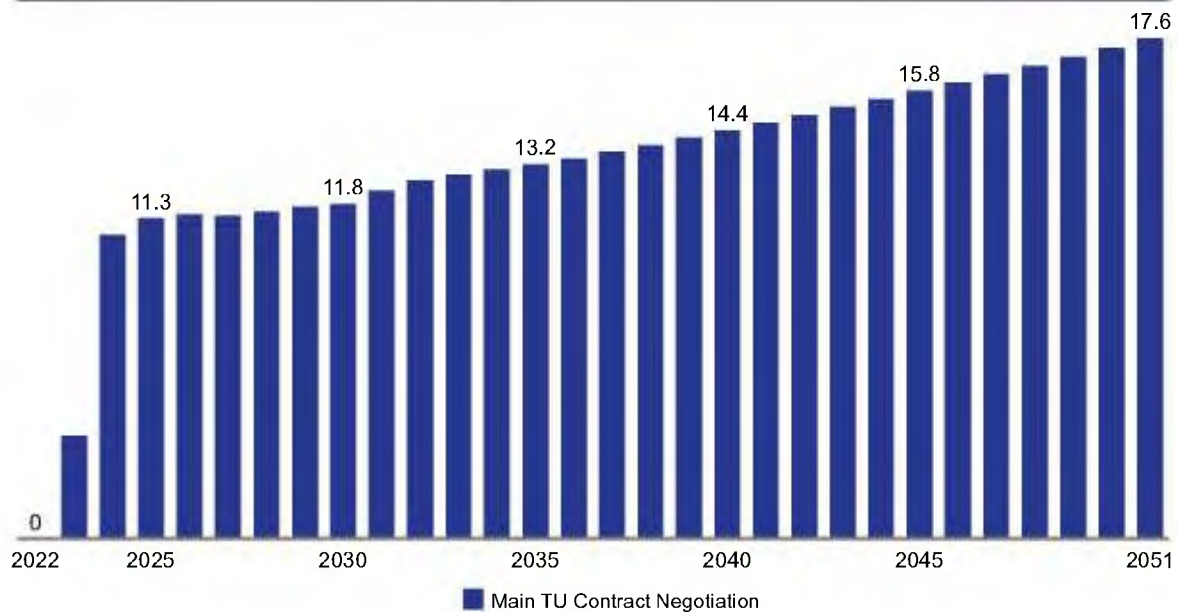
The proposed plan could generate on average \$14 million per year in savings starting in FY23, and a cumulative total of \$394 million through FY51. These figures will be subject to the outcome of a competitive bidding process.

⁹³ Excludes insurance and utilities costs.

⁹⁴ Based on National Transportation Database 2019 operating expense information. Peer systems are other heavy rail, often single line systems in other U.S. states, including the PATCO Speedline, Metro SubwayLink, Staten Island Railway, RTA Rapid Transit (Red Line), and Miami-Dade MetroRail.

Exhibit 71: Potential TU Contract reassessment savings, FY22-51

Potential TU Contract Reassessment Savings, \$M



Assumptions: Assumes that the costs of the new Tren Urbano Operating Contract will be comparable to the cost of similar contracts in peer transportation authorities / The June 2020 Fiscal Plan assumes the mean of this range as its base scenario.

Exhibit 72: Required implementation actions for reassessing Tren Urbano contract

Measure	Action item	Responsible party	Deadline
Reassess Tren Urbano contracts	Begin reassessment of Tren Urbano operating contract, which is set to end in 2032	HTA/PRITA/P3A	October 31, 2021
	Launch a competitive procurement process for Tren Urbano operating contract	HTA/PRITA/P3A	February 28, 2022
	Select new Tren Urbano operator	HTA/PRITA/P3A	August 31, 2022
	Draft new operating contract and submit to FOMB for review	HTA/PRITA/P3A	November 30, 2022
	Begin operation of Tren Urbano under new contract terms	HTA/PRITA	February 28, 2023

11.5) Implementing congestion management mechanisms – Bus Rapid Transit and signal optimization

HTA is planning to implement bus rapid transit lanes and signal optimization to reduce congestion. Baseline metrics have been developed and will be reported against to measure the efficacy of these initiatives and status of the overall initiative. HTA must continue to implement the following measures:

- **Optimize traffic signals:** HTA must continue to synchronize traffic signals in critical intersections. This will facilitate the flow of traffic in major urban traffic arteries and reduce the burden on commuters during high traffic-volume hours. It will require an upfront investment of approximately \$4.7 million in FY22 and about \$1.5 million in annual maintenance investments until FY51.
- **Expanding Bus Rapid Transit (BRT) and integrating it with Tren Urbano:** Increasing the scope and frequency of its BRT operations will help HTA reach neighborhoods that do not currently have existing Tren Urbano feeder bus lines. To accomplish this, the Authority will continue to work closely with DTOP and local municipal authorities to create more dedicated spaces for BRT operations (e.g., special road lanes and off-board collection areas).
- **Opening new BRT line:** Bus rapid transit lines are used to ensure that buses can operate more efficiently and on a coordinated schedule by operating on separated lanes. The new BRT line from Caguas to San Juan is operational as of May 2021. The addition of this BRT line is not expected to generate a positive fiscal impact. However, its development and implementation is necessary to provide residents of Caguas and surrounding areas access to reliable transportation services to the San Juan metropolitan area.

Exhibit 73 shows the combined impact of signal optimization and BRT, and Exhibit 74 shows the implementation timeline.

Exhibit 73: Impact of congestion management measures, FY22-51

Congestion management measures – BRT and signal optimization impact, \$M

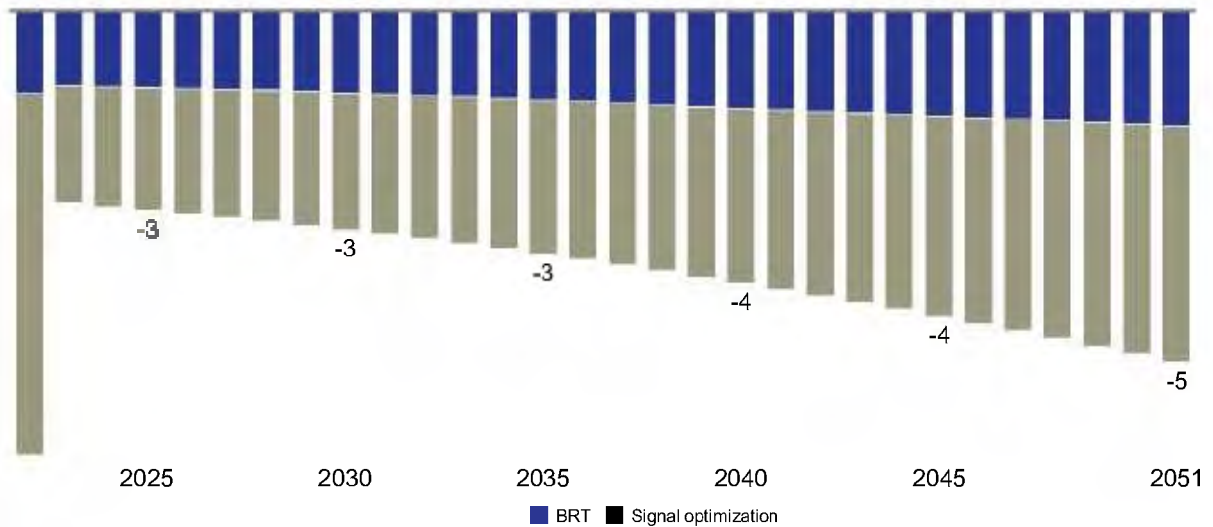


Exhibit 74: Required implementation actions for introducing new congestion management mechanisms

Measure	Action item	Responsible party	Deadline
Introduce new congestion management mechanisms	Identify potential new BRT lines	HTA	December 31, 2021
	Begin traffic signal optimization	HTA	June 30, 2022
	Create more dedicated BRT spaces (e.g., special road lanes and drop-off zones)	HTA, Commonwealth, and Municipalities	June 30, 2024

CHAPTER 12: CAPITAL EXPENSE OPTIMIZATION

Over the last 20 years, HTA has invested about \$10 billion in infrastructure, including the construction of the new Tren Urbano system. To maintain SOGR on roadways and transit, HTA would need to spend an estimated \$13.1 billion cumulatively by FY51. HTA must make these expenditures to improve, rehabilitate, and preserve existing roadways. The capital investment to upgrade and maintain Puerto Rico's roads in SOGR will in turn support Puerto Rico's residents and promote economic growth across the Island.

The Authority is adopting a capital program, optimized to reduce HTA's expenses by approximately \$0.2 billion over a 30-year period, delivering 4% of the total fiscal measure impact. Implementation of the capital program will also help HTA ensure its projects are delivered on-time and on-budget, by making good use of scarce resources for capital projects

12.1) Optimizing Construction Costs

HTA shall continue to prioritize its projects and delivery more efficiently in a manner that maximizes the value of its investments in the transportation system. Based on peer benchmarks and internal examples of success, these efforts must reduce current capital project spending requirements by 5% or more, without impacting the quality and outcomes of projects, to ensure the fiscal targets contained in this Fiscal Plan are achieved. As such, there are three ways to optimize CIP: (1) prioritize projections for selection, (2) optimize delivery, and (3) identify soft cost efficiencies.

Project prioritization

HTA's planned projects for the Fiscal Plan period should focus on highway safety projects, improvement of existing infrastructure, and improvement of buses and the TU train system. At present, HTA uses a set of guidelines developed by the FHWA to prioritize projects for pavement reconstruction, highway safety, and bridge rehabilitation per requirements for SOGR. In the short-term, HTA uses the federal guidelines to prioritize projects, in addition to the prioritization framework used for the Abriendo Caminos and the PEMOC program.

To prioritize projects in the long term, HTA has developed a project prioritization framework to include projects not part of the national highway system ("NHS") and not funded by FHWA funding (Exhibit 75).⁹⁵ The framework weighs decision criteria to prioritize safety, system performance, and ways to extend the life of transportation assets. It then connects these criteria to the Long Range Transportation Plan's ("LRTP") goals. Despite developing this framework in 2019, HTA has not applied it to make robust project prioritization decisions. Application of these prioritization frameworks—not simply their development—is central to the impact of the measure. HTA should adopt the framework to continue capturing benefits and implementing necessary capital expenditures to promote economic growth.

⁹⁵ 2020 Certified Fiscal Plan for HTA.

Exhibit 75: HTA Prioritization Framework

Achieve a state of good repair	System Performance	30	<ul style="list-style-type: none"> Improve/maintain condition of capital assets
Improve performance of most critical corridors	System Performance; Economic Vitality; Mobility and Accessibility	25	<ul style="list-style-type: none"> Improve intersection performance, system bottlenecks, and transit Increase operational capacity in a cost effective manner Improve performance of freight and high travel corridors Prioritize the completion of projects which connect to ports and economic centers, and complete the island's strategic highway network
Resiliency, safety, and emergency response	System Performance; Environmental Sustainability	20	<ul style="list-style-type: none"> Improve safety, resiliency, and emergency response Improve resiliency and emergency response Reduce reliance on motorized travel, promote energy efficiency, and incorporate "reduce, reuse, recycle", practices in delivering infrastructure
Promote alternative modes of travel	Environmental sustainability; Mobility and Accessibility	15	<ul style="list-style-type: none"> Invest in redevelopment of urban centers to reduce need for motorized travel Improve coverage, capacity, and service of alternative modes of travel Improve modal connectivity (first mile/last mile) Improve coverage, capacity, and service of alternative modes of travel
Ensure cost effectiveness	Mobility and Accessibility	10	<ul style="list-style-type: none"> Cost effectiveness assuming mobility benefits Provide mobility for transportation-disadvantaged populations

Project delivery optimization

HTA has adopted and will expand the elements of its project delivery optimization process. The optimization process includes the following enhancements across the project lifecycle:

- **Project definition:** Adequate project definition and selection of optimal alternatives, including standard processes by project type. HTA uses standard project definition workflow for a number of project types, including Abriendo Caminos, PEMOC, and emergency projects.
- **Pre-construction:** Comprised of (i) standard design and engineering, including standard contract packages by project type, and (ii) enhanced preconstruction management, including procurement and contract approaches by project type and an adequate balance between internal and external capabilities.
- **Construction:** Enhanced construction management with an adequate balance between internal and external capabilities.
- **Closeout process:** Streamlining of the project close-out process.

Impact measurement

The processes above demonstrate significant progress by HTA in pursuing a more rigorous project prioritization process. By codifying these processes, HTA can compare itself to best-in-class transportation agencies and determine where it can increase efficiencies and gain cost savings. Per HTA's estimates, the revised project prioritization approach is expected to reflect an average savings of 5% of baseline expenses.

Through full implementation of this framework, HTA is projected to achieve \$205 million in savings from FY22 to FY51.

Exhibit 76: Capital delivery optimization opportunity

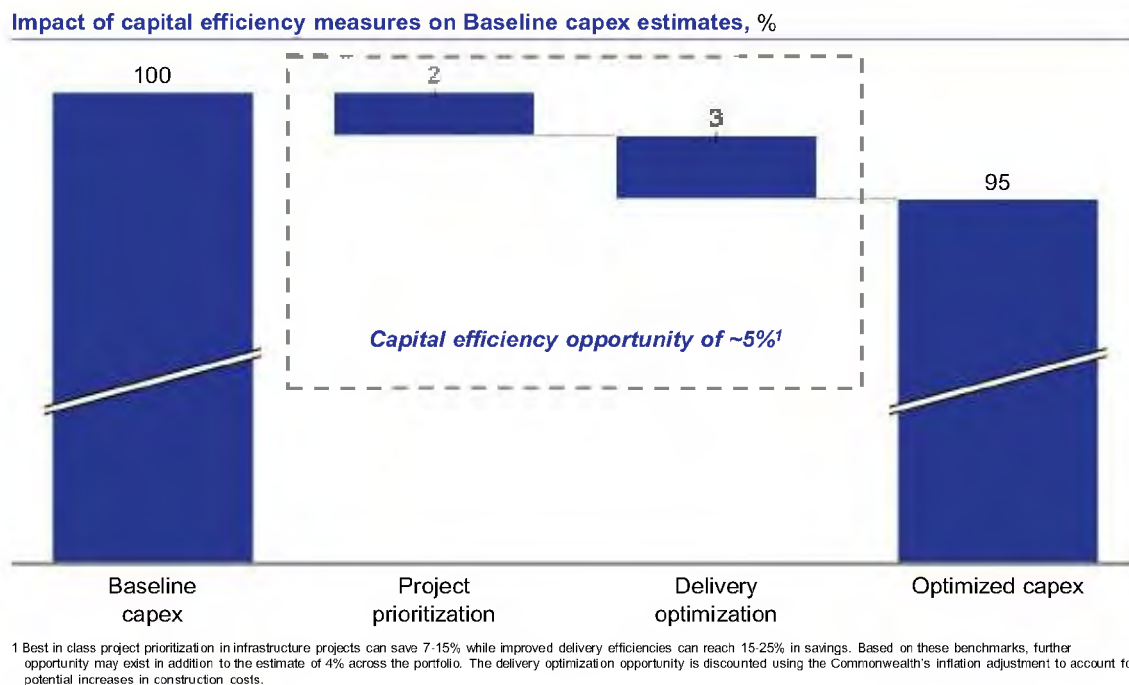


Exhibit 77: Required implementation actions for Capital Expense Optimization

Measure	Action item	Responsible party	Deadline
Optimize Capital expenses	Refine analysis to identify incremental CapEx delivery optimization and soft cost efficiency opportunities, and conduct working sessions with FOMB to confirm.	HTA	September 30, 2021
	Propose set of projects that would benefit most from creation of standard project definition workflows (e.g., commonalities, frequencies)	HTA	Ongoing
	Propose set of projects that would benefit most from creation of standard design	HTA	Ongoing

	packages (e.g., number of stakeholders, frequencies)		
	Identify and propose opportunities to leverage alternative procurement methods	HTA	Ongoing
	Identify capability gaps within in-house construction team	HTA	December 31, 2021
	Implement pilot improvements to address opportunities areas identified in capital delivery diagnostic	HTA	Ongoing
	Use standard project definition workflows for initial set of projects	HTA	Ongoing
	Use standard design packages for initial set of projects	HTA	Ongoing
	Create and propose alternative procurement RFP(s) for eligible projects	HTA	Ongoing
	Create plan to address capabilities gaps (e.g., outsourcing, training) within the construction team	HTA	March 31, 2022
	Complete FHWA-approved process improvements (e.g., pay-item sampling) to expedite invoice processing in project close-out	HTA	June 30, 2022
	Complete implementation of electronic records management system to facilitate efficient project close-outs	HTA	June 30, 2022

CHAPTER 13: PUBLIC-PRIVATE PARTNERSHIP OPPORTUNITIES

Public-private partnerships (P3) are integrated service or project delivery approaches through which a public agency enters into a contractual agreement with a private sector entity to deliver a service. Under a P3 approach, the private sector entity assumes responsibility for the design, construction, financing, operations or the maintenance of facilities for the specified period while asset ownership remains with the public partner and possession reverts at the end of the concession period.⁹⁶ Puerto Rico's transportation sector underperforms in road safety, traffic congestion levels, public transit services and system integration resulting in suboptimal financial performance and overall sustainability. Given the complexity of managing an island's transportation infrastructure cost-effectively, P3s should be pursued to leverage private sector capital delivery capabilities and facilitate performance-based management.

The Commonwealth's 2021 Certified Fiscal Plan calls for strategic initiatives to attract private capital. Aging infrastructure, rising capital costs, shrinking budgets, limited labor availability and constrained funding all limit HTA's capacity to deliver a system in SOGR. By leveraging P3 concessions, HTA can accelerate the implementation of needed transportation improvements and access new sources of funding. Through concessions, the public sector can limit risks inherent to the development of infrastructure (cost overruns, schedule overruns, etc.) by sharing responsibility with the private sector.⁹⁷

Aligned with the objectives of the transportation sector reforms laid out in the 205(a) letter sent on January 29, 2021, concession opportunities on key roads (e.g., PR-20, PR-52, PR-53, and PR-66) will be evaluated as a potential method for HTA to secure additional capital inflows, improve operations, and improve infrastructure to promote economic growth. Public-private partnerships will ultimately improve access a well-maintained and safe highway system.

HTA has a history of successfully utilizing concessions to improve road quality and financial sustainability. In 2017, HTA worked with Autopistas Metropolitanas de Puerto Rico, LLC (Metropistas) to create a 50-year toll road concession of PR-22 and PR-5, raising a total of \$1.2 billion.^{98,99} These proceeds have enabled HTA to repay \$902 million of its existing debt and reinvest the remainder into future improvement projects for the region. In addition to raising funds, Metropistas has demonstrated success with quality improvements based on improved metrics for road conditions. As of 2019, 99% of PR-22's pavement is in "good" or "fair" condition, compared to 83% for Puerto Rico's interstate system as a whole.

Going forward, HTA must evaluate several options for executing concessions, including, but not limited to:

⁹⁶ DLA Piper, Public-Private Partnerships in Puerto Rico: Key Points (2017)

⁹⁷ USDOT FHWA Office of Innovative Program Delivery, Report on Highway Public-Private Concessions in the United States (Dec.2016)

⁹⁸ Ibid.

⁹⁹ The \$1.2 billion sum includes the up-front payment to HTA (\$1.08 billion) and the concession agreement extension (\$115 million), which increased the revenue share.

- Outsourcing of toll operations and hiring of a contract manager (with HTA keeping all revenues, less operating fees)
- Traditional concession agreements with a significant upfront payment
- Concession agreement with no upfront payment and including revenue share

HTA will study which of its assets are eligible for concessions and commission relevant asset condition and traffic and revenue reports to determine specific areas of opportunity; HTA is allocated \$5 million over the next two fiscal years to implement these measures. HTA must prioritize opportunities based on its ability to improve both outcomes for road quality and the fiscal responsibility of HTA.

Exhibit 78: Required implementation actions for pursuing P3 opportunities

Measure	Action item	Responsible party	Deadline
Pursue P3 opportunities	Evaluate and prioritize potential areas for additional concessions led by 3 rd party.	HTA/P3A	August 31, 2021
	Finalize due diligence process and desirability and convenience study .	HTA/P3A	September 30, 2021
	Evaluate different potential deal structures using variety of scenarios within fiscal plan constraints. Finalize and share with FOMB detailed opportunity by opportunity execution plan for prioritized concession opportunities.	HTA/P3A	April 30, 2022
	Launch RFP(s) for prioritized concessions	P3A	Based on execution plan and aligned with legal constraints
	Begin first new concession agreement	HTA/P3A	Based on execution plan and aligned with legal constraints

PART VI – LIQUIDITY SITUATION

CHAPTER 14: CASH POSITION OF HTA

Due in part to the effects of the COVID-19 pandemic, HTA did not execute the full scope of its planned FY21 capital program. The surplus thereby generated in FY21 could be deployed in the coming years on planned projects that were obligated in FY21, for which funding has not yet been disbursed. These projects will have disbursements as the CIP returns to historical spending levels.

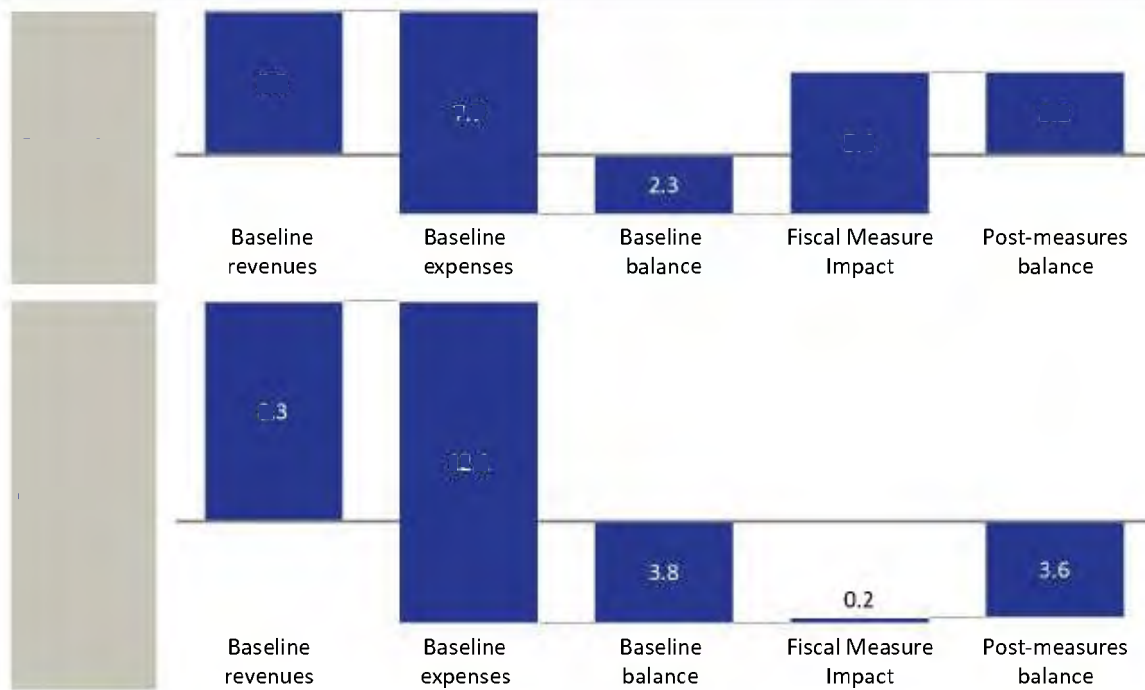
If HTA fully and promptly implements all the measures in the Plan, it is expected that HTA could achieve operational surpluses as early as FY23. From FY22 to FY51, the Certified Fiscal Plan projects an average annual pre-CW transfer operational surplus of approximately ~\$105 million and a capital deficit of about ~\$121 million per year. This would produce a total cumulative operating surplus of approximately \$3.2 billion and a total cumulative capital deficit of about \$3.6 billion, pre-CW transfer. After including the CW operating transfer, HTA would have an aggregate cumulative surplus of approximately \$2.8 billion over the course of the Fiscal Plan (FY22 to FY51).

If the measures outlined in the 2021 Certified Fiscal Plan are not implemented, the Authority will likely have an annual operational deficit of approximately \$76 million and an average capital deficit of approximately \$128 million per year from FY22 to FY51. HTA's total cumulative operating deficit would be \$2.3 billion, and cumulative capital deficit would be \$3.8 billion. HTA would therefore have an aggregate cumulative deficit of approximately \$6.1 billion pre-CW transfer and \$2.8 billion post-CW transfer from FY22-51. This situation would be financially unsustainable and could jeopardize Puerto Rico's future infrastructure development. It would also lead to deteriorating road conditions and worsening congestion.

Under both scenarios (full implementation or lack thereof), the projected net deficit puts at risk HTA's capability of delivering transit and transportation investments needed to improve Puerto Rico's overall economy without the significant transfers from the Commonwealth described herein.

Exhibit 79: Pre-CW Operating Transfer Financial Performance of HTA FY22-FY51

Financial performance of HTA , FY22-51, \$B



CHAPTER 15: COMMONWEALTH TRANSFER

In line with the 2020 Certified Fiscal Plans for both HTA and the Commonwealth, the 2021 Fiscal Plans contain a variable transfer tied to funding required to meet HTA's operational expenses and capital program needs (including a reserve for these expenditures as described below). This funding level is based on projections of the HTA Fiscal Plan, assuming full and successful implementation of the fiscal measures. Due to the Commonwealth's own fiscal challenges as set forth in its certified Fiscal Plan, the Commonwealth is unable to transfer any funds to HTA for any other purpose. As explained in the Commonwealth 2021 Certified Fiscal Plan:

"[The Commonwealth 2021 Certified Fiscal Plan] increases the HTA operating transfer to cover the full cost of non-toll assets, marking the first step towards the implementation of the Transportation System Reform outlined in Chapter 11 of the Commonwealth Certified Fiscal Plan. The appropriation does not include funding for the HTA emergency reserve, nor does it draw down existing balances. It also assumes toll roads have access to federal funds until reorganization is complete (assumed FY23), but not thereafter... The Commonwealth operating transfer may be reduced in a proportionate amount should the Federal Highway Administration (FHWA) federal funding for non-toll assets appropriated to HTA increase.

The HTA operating transfer is intended to be used by HTA solely to fund costs associated to non-toll assets and is not available to be used for any other purposes, including funding costs and projects above and beyond those contemplated in HTA's Certified Fiscal Plan."

Historically, the Commonwealth funded an emergency reserve equal to three to six months of operational and capital delivery required funding. As of this year, the emergency reserve will no longer be funded as the non-toll assets will be able to access the Commonwealth's emergency reserve after the transportation sector reforms.

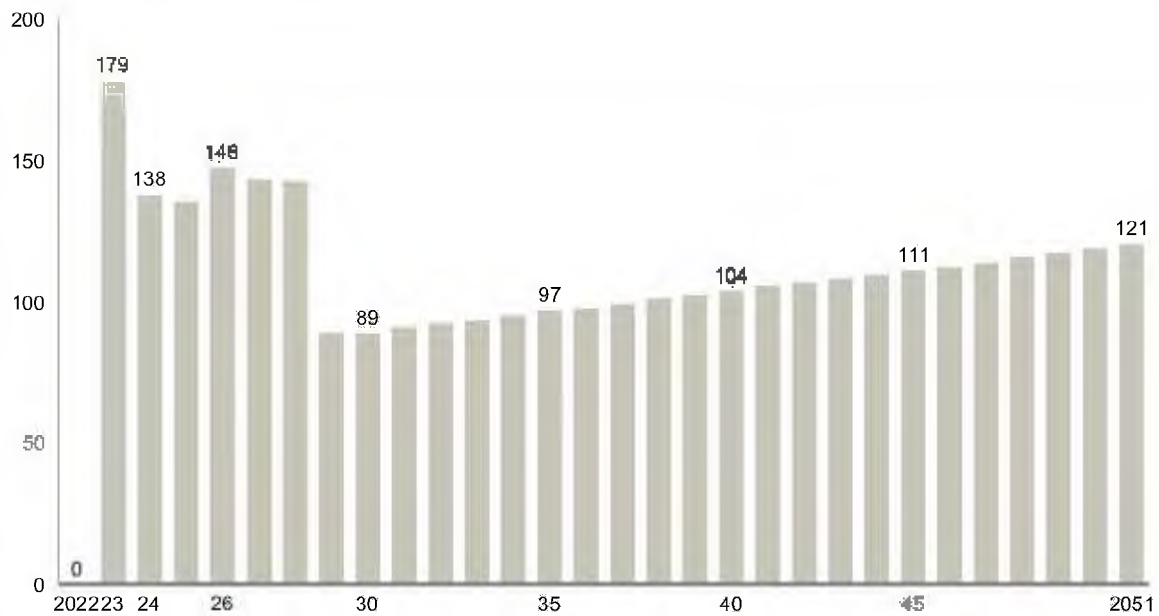
The Commonwealth provides funding to HTA in line with its vision of the future transportation sector reform. The funding, therefore, is tied to the estimated level of investment to maintain the non-tolled roads and transit assets, as the toll roads can fund own operating and capital expenses. The level of funding is based on the estimated apportionment of costs and revenues between asset classes and is subject to further refinement, particularly as capital project plans are finalized. From FY23-26 the CW transfer averages \$150 million per year, plus the \$54 million per year in regular CapEx appropriation. Across the full FY22-51 period, the Fiscal Plan assumes an operating transfer of \$3.3 billion.

The levels of Commonwealth Operating Transfer contained within this Fiscal Plan differ from those in the Commonwealth 2021 Certified Fiscal Plan, and this will require amendment to that Plan. The Commonwealth 2021 Certified Fiscal Plan set the level of Operating Transfer based on the HTA 2020 Certified Fiscal Plan, which was the latest available view of HTA's fiscal outlook at the time of the Commonwealth plan's certification. However, the HTA 2021 Fiscal Plan includes a different capital disbursement curve, uses different macroeconomic growth assumptions, and includes refinements to fiscal measure impact forecasts from those included in the HTA 2020

Certified Fiscal Plan. This changes the level of funding that HTA requires in each year, and therefore, this Fiscal Plan includes an update to the level of annual Commonwealth Operating Transfer, shown in detail below. The net result of this revision is that no Commonwealth Operating Transfer is required to fund HTA's expense profile in FY22, and that FY23-51 will require an annual transfer of \$113 million per year on average. This creates an inconsistency between the Commonwealth and HTA 2021 Certified Fiscal Plans. FY22 budgets will be updated to reflect this, and the Commonwealth 2021 Certified Fiscal Plan will be amended accordingly.

Exhibit 80: Annual Commonwealth Operating Transfer to HTA, FY22-51

Annual CW operating transfer, FY22-51 \$M



PART VII – DEBT SUSTAINABILITY

CHAPTER 16: POST-MEASURES DEBT SUSTAINABILITY

HTA is currently carrying approximately \$6.6 billion in debt. Since HTA entered Title III in May 2017, HTA has had insufficient cash flows to service its outstanding debt and as a result has not made payments since July 2017. Given that (a) HTA's revenues are insufficient to fund its operating expenses, projected capital improvement needs, and an emergency reserve without approximately \$3.3 billion in appropriations from the Commonwealth during the 30-year period covered by this Fiscal Plan, and (b) the Commonwealth's own fiscal challenges during this period will preclude any further appropriations to HTA, HTA's existing debt is not sustainable and requires significant adjustment under Title III.

Even with implementation of the measures described in this Fiscal Plan, HTA is projected to have a cumulative deficit of \$466 million. In Chapter 15, the Fiscal Plan discusses a variable transfer from the Commonwealth to help with operations, capital needs and to help HTA build up an emergency reserve. Following a near-term period of operating deficits as Fiscal Plan measures are implemented, HTA is expected to have operational surpluses that will fund a greater share of capital needs from its own resources. Further assistance from the Commonwealth, however, will be required for capital and reserve requirements for the entire 30-year period.

The amount of net revenues available for other needs besides implementation of the crucially important SOGR capital improvement program, such as the payment of debt service, are also highly dependent on the Authority achieving additional positive cash flow to enable HTA eventually to operate at a surplus without the projected Commonwealth variable transfer requirement. The Fiscal Plan utilizes the following matrix to illustrate the implied debt capacity over a 30-year period assuming level debt service at differing coupon levels and varying hypothetical levels of net revenues available for debt service throughout the 30-year period. For example, if the net revenues available for debt service are \$50 million for 40 years and the coupon level is 5%, the implied debt capacity would be \$858 million. For purposes of this matrix analysis, the Fiscal Plan analyzes the debt capacity to the assumed net revenues at 1.0 times coverage to debt service.

Exhibit 81: Implied debt capacity

<ul style="list-style-type: none">▪ The following matrix illustrates, for varying coupon levels and primary surplus, or net revenue, figures, the amount of restructured HTA debt that could be supported by that surplus level.▪ The matrix assumes a 30-year, level debt service payment structure and only one-time coverage of net revenues to debt service.		Sensitivity Analysis: Implied Debt Capacity at 1.0x Coverage				
			\$25	\$50	\$75	\$100
		4.0%	\$495	\$990	\$1,484	\$1,979
		5.0%	\$429	\$858	\$1,287	\$1,716
		6.0%	\$376	\$752	\$1,128	\$1,505

Values in USD millions

PART VIII TRANSPORTATION REFORM

CHAPTER 17: TRANSPORTATION SECTOR REFORM

As one of the primary players in Puerto Rico's transportation ecosystem, HTA has a key role in shaping the future of the transportation network through reforms that deliver a system in a SOGR.

The transportation sector is essential for both economic and social development in Puerto Rico, given its critical role in facilitating the movement of goods and people on the Island. A well-performing transportation system can increase access to jobs and business opportunity, unlocking the productive potential of residents and firms. In turn, a transportation system can increase economic output and invite further private investment. Meanwhile, a poorly performing system can mire its residents in wasted time, inequitable access to jobs and opportunities, fractured communities, and productivity losses. Puerto Rico is currently suffering from several of these factors.

As outlined in the Executive Summary, Puerto Rico's transportation sector currently underperforms across a range of outcomes, including congestion, safety, and road quality. In 2020, the HTA reported to FHWA that 12% of Puerto Rico's Lane miles are in "poor" condition; federal law mandates that no more than 5% of lane miles may be in a "poor" state for pavement conditions on the Interstate System.^{100,101} As a result, for the second consecutive year, FHWA imposed a penalty and constraints on some portion of its federal allocated funds.¹⁰²

The state of public transit infrastructure and management in Puerto Rico deserves special focus given its many challenges. Congestion is increasing in many metropolitan areas, creating additional delays for commuting and transportation of goods. High congestion is due in part to the minimal use of mass transit; the San Juan metro area has 37,000 more households commuting by private vehicle than would be expected if mass-transit usage matched the U.S. average.¹⁰³ As a result of the extra vehicle journeys, San Juan experiences two additional weeks of low air-quality days per year, compared to the U.S. average.¹⁰⁴ Worse yet, NOx and PM2.5 emissions from vehicles are statistically associated

¹⁰⁰ As defined by 23 USC 103(c)

¹⁰¹ 23 USC 119(f)(1) and 23 CFR 490.315

¹⁰² In a letter dated September 30, 2020, FHWA informed HTA the determination regarding pavement conditions in the Interstate System. After analyzing the 2019 Interstate System pavement condition data reported by HTA on the Highway Monitoring System, FHWA determined that (1) HTA did not meet the minimum level requirements for pavement condition on the Interstate System as required in 23 USC § 119(f)(1) and 23 CFR § 490.315 and (2) penalty under the provisions of the Interstate System Condition (23 USC § 119 (f)(1) must be invoked pursuant to 23 CFR § 490.317. As a result, HTA will have constraints on some portion of its allocated funds as per 23 CFR § 490.31(e).

¹⁰³ 22% of San Juan metro area residents commute via carpool, walking, bicycling, or public transit, compared to 27% for the U.S. as a whole. Data.IO

¹⁰⁴ Low air quality defined as AQI > 100; PR has 19 days per year to U.S. median of 4, as per the Department of Natural and Environmental Resources website

with higher mortality rates in the local population.¹⁰⁵ The current transit system suffers from limited efficiency, route coordination, operational cohesiveness, and accessibility. These issues result in higher congestion and reduced mobility, particularly for low-income residents who experience long commutes or are forced bear the costs of owning a private vehicle.

Tren Urbano, HTA's branch of the transit system, has a farebox recovery ratio of only 7%,¹⁰⁶ down from 15% as recently as FY17.¹⁰⁷ Further, the percent of non-fare directly-generated public transit revenue (as a percent of total transit revenue) in Puerto Rico is about half of the US median.¹⁰⁸ At the outset, construction of TU took 75% longer than expected, delaying its opening by four years and increasing project costs from \$1.5 billion to \$2.3 billion. A 2017 assessment after Hurricanes Irma and María found that more than 50% of the turnstiles (barriers) were not operational, 20% of the ticket vending machines were defective, non-compliant with Payment Card Industry Standards and equipped with outdated software. TU has failed to fix these problems, despite federal funding available to do so since 2012.

On January 29th, 2021, the FOMB sent a PROMESA section 205(a) letter to the government proposing a series of reforms to address the root challenges of underperformance in Puerto Rico's transportation sector:

- 1) Individual modes of transportation have overlapping and fragmented ownership.
- 2) There is poor performance management within individual modes of transportation and limited multi-modal coordination.
- 3) Agencies do not maximize their funding potential, reducing public and private investment available for the transportation network.

The section 205(a) letter laid out major reforms for the Commonwealth to implement across the various transportation entities on the Island (e.g., AMA, HTA, DTOP, PRITA). On April 29, 2021, the Commonwealth responded, expressing its commitment to examine paths of implementation. Although HTA requires the support of other agencies to implement the recommendations, HTA has a critical role to play in rationalizing the transportation system. The Commonwealth Certified Fiscal Plan laid out a series of initiatives to accomplish the goals enumerated in the January section 205(a) letter, for which HTA is allocated \$5 million to assist in implementation. This Fiscal Plan establishes how HTA shall support the implementation goals of the January 205(a) letter:

¹⁰⁵ EPA estimates excess deaths per ton of emissions at 0.002 for NO_x and 0.1 for PM 2.5 .

¹⁰⁶ <https://www.transit.dot.gov/ntd/data-product/2019-data-tables>

¹⁰⁷ National Transit Database, 2017.

¹⁰⁸ <https://www.transit.dot.gov/ntd/data-product/2019-funding-sources>

Recommendation A: Reorganize Puerto Rico's transportation assets into transportation mode- specific entities.

The current state, where several different agencies have overlapping control and responsibilities of toll-roads, non-toll roads, and transit agencies, leads to inefficiencies, lack of coordination and poor outcomes for citizens. To solve this, transportation sector reform aims to ultimately create three entities: one toll road authority, one non-municipal non-toll roads agency, and one integrated transit authority.

The Commonwealth 2021 Certified Fiscal Plan laid out key initiatives towards accomplishing this rationalization:

- Integrate all transit assets under PRITA: PRITA must be empowered to fulfill its original intention, and act as a unitary transit authority by managing all transit on the Island (e.g., all buses, ferries, Tren Urbano). To accomplish this, the Government should ensure PRITA achieves federal grantee status as necessary to take on these new roles and responsibilities (e.g., FTA grantee status).
- Integrate non-toll roads under DTOP: The transportation system must have a dedicated authority to assume responsibility for construction and maintenance of non-toll roads separate from toll roads. Separation of responsibility by road type will better align sources of funding with entity mandates (i.e., public funds used for publicly managed roads). This would require that relevant personnel and capabilities also shift from HTA to DTOP to ensure DTOP can manage the full portfolio of non-toll roads.

Given HTA's ownership of, and responsibility to, manage toll roads, non-toll roads, Tren Urbano, and related feeder buses, HTA shall be a key part of the solution to rationalizing asset ownership on the island. Accomplishing the above would require relevant personnel and capabilities shift from HTA to DTOP to ensure resources for managing the full portfolio of non-toll roads. It is to be noted that the transfer of non-toll road assets out of HTA could involve additional steps and assumed risk. Asset transfer will require the transferal of FHWA grantee status to DTOP, which requires that DTOP be in full compliance with Title 23 requirements of the Code of Federal Regulations.¹⁰⁹ Furthermore, the transfer would require that DTOP acquire full capacity to both operate and maintain the roads, for which DTOP may not currently have the organizational capacity or capabilities. HTA would need to ensure that relevant knowledge and capabilities are transferred with the assets, given its experience overseeing non-toll roads.

There are other options for achieving a modal separation of non-toll, and toll roads; for instance, HTA could absorb non-toll roads from DTOP and spin off its toll assets into a separate, concessionaire-operated entity. This would allow HTA to leverage its existing

¹⁰⁹ At present, HTA is the only FHWA grantee in Puerto Rico, and as such, complies with all 23 CFR requirements. According to 23 U.S.C. § 302 and Title 23 of the Code of Federal Regulations, the grantee needs to be suitably equipped and organized to discharge to the satisfaction of the FHWA Secretary the statutory duties.

capabilities and federal grantee status. While the default assumption remains for HTA to serve as the toll road authority, working alongside DTOP as the non-toll entity, the Commonwealth is open to exploring alternative solutions that accomplish the outcomes of the 205(a) letter.

Regardless of which entity ends up with final ownership of non-toll roads, the steps to begin the transfer of non-toll roads and transit assets remain consistent; as such, HTA shall first identify what share of operating expenses, personnel, and capital are associated with each of three underlying asset categories (toll road, non-toll road, transit). This will be facilitated by fully implementing Fiscal Measure 9.3, “Conduct personnel mapping by asset.” Relying on outside resources as necessary, HTA shall assist in the budgeting and resourcing for each of these entities, ensuring that any asset transfer is accompanied by the requisite funding to operate or maintain that asset. HTA, based on its experience constructing, operating, and maintaining these transportation assets, shall also ensure that relevant knowledge and capabilities are transferred with the assets as needed. Similarly, HTA shall assist in ensuring that its federal grantee status for both FHWA and FTA are either transferred or duplicated to the respective non-toll road and transit entities as needed. Through these actions, HTA shall ensure that the components of the transportation that it owns and operates will be jointly managed by focused entities across the island, allowing agencies to operate assets at scale and achieve targeted impact. The implementation path laid out in Exhibit 83 is subject to change depending on the decisions made for asset transfer.

Exhibit 82: Proposed alignment of asset types to entities



Exhibit 83: Implementation plan for asset transfers, prone to adjustment

Measure	Action item	Responsible party	Deadline
Track impact of reforms	Adopt transportation sector reform KPIs per the Commonwealth's selected scorecard ¹¹⁰	Commonwealth/HTA	August 31, 2021
Allocate transportation assets into mode-specific entities	Develop a program foundation to align on priorities, success metrics, measures and future state organizational structure to demonstrate progress	PRITA, HTA, DTOP, AAFAF	October 1, 2021
	Organize assets, roles and responsibilities within existing entities into asset-class groupings	PRITA, HTA, DTOP, AAFAF	October 1, 2021
	Identify legal and other obstacles to asset reorganization and present to FOMB	PRITA, HTA, DTOP, AAFAF	October 1, 2021
	Segregate costs/revenues associated to tolled, non-tolled roads and transit assets (i.e. labor, opex, etc.) and assign by asset class	PRITA, HTA, DTOP, AAFAF	October 1, 2021

¹¹⁰ Included based on the inclusion of a scorecard as suggested by the Commonwealth in their April 29, 2021 response to the original 205(a) letter. Timeline for HTA's adoption will be subject to Commonwealth implementation of this measure.

Measure	Action item	Responsible party	Deadline
	Amend/Update entity organizational structures to accommodate restructured roles and responsibilities	PRITA, HTA, DTOP, AAFAF	November 15, 2021
	Transfer personnel and resources (as applicable) to the relevant entities	PRITA, HTA, DTOP, AAFAF	June 30, 2022
	Finalize transfer of roles and responsibilities for non-tolled roads from HTA to DTOP or relevant authority.	PRITA, HTA, DTOP, AAFAF	June 30, 2023
Re-allocate transit assets to PRITA	Perform initial assessment of legal, Federal Transit Administration (FTA) and Transportation Asset Management Plan (TAMP) considerations	PRITA, HTA, AAFAF	September 1, 2021
	Specify, procure, and implement required system to operate transit assets (e.g., IT infrastructure)	PRITA	December 31, 2021
	Achieve minimum financial, legal, and technical capacity to effectively manage FTA funds	PRITA, AAFAF	October 1, 2022

Recommendation B: Create an overarching transportation policy board to guide multi-modal transportation strategy across the Island.

In accordance with the future vision for coordinated transportation assets across Puerto Rico, a transportation policy board will be established to set coordinated priorities for each agency. The Transportation Policy Board (“TPB”) shall control a common transportation fund and suggest projects for funding across all transportation modes based on their potential to advance the island-wide transportation strategy. These projects could be proposed by a variety of transportation stakeholders, including metropolitan planning organizations, local governments, and local transit agencies. The Board shall facilitate coordination between the agencies to ensure ease of multi-modal transportation for its users.

The TPB shall be empowered to, at a minimum:

1. Set long-term, cross-modal, strategic plans and investment priorities applicable to all transportation investments on the Island;
2. Regularly review and report on execution compared against strategic plans, providing transparency and guidance on any corrective steps required;
3. Coordinate the federal grants strategy for all transportation entities to harmonize the process and maximize opportunity and availability of federal funds;
4. Develop and oversee the use of objective frameworks for project selection and project prioritization processes; and
5. Provide oversight and compliance checks to both the pre-construction and capital delivery activities.

The proposed TPB would provide oversight and guidance for the transportation entities within the Government but would not seek to burden them with new regulations, leaving implementation of long-term strategic plans to each relevant entity.

Although the responsibility of creating an Island-wide transportation Board will largely fall on the Commonwealth, HTA must leverage its experience and provide input regarding the Board’s structure. Once established, HTA shall formalize its interaction model with the Board through a Memorandum of Understanding and leverage the Board’s perspective to guide project planning, to ensure optimal multi-modal outcomes in Puerto Rico.

Exhibit 84: Implementation Plan for Transportation Policy Board and multimodal coordination for transportation network

Measure	Action item	Responsible party	Deadline
Establish Transportation Policy Board or analogous entity	Establish an independent advisory board responsible for setting long term holistic strategic plans and oversight of investment prioritization processes to advance transportation from an Island-wide perspective	AAFAF	November 1, 2021
	Establish processes and guidelines for reviewing and reporting on the execution of strategic plans and providing transparency and guidance on corrective action	Transportation Policy Board (TPB)	December 1, 2021
	Establish processes and guidelines for coordinating the federal grants strategy for all transportation entities to harmonize the process and maximize availability of federal funds	TPB	December 1, 2021
	Assess and develop mechanisms to lower traffic congestion and increase accessibility to transit	TPB	December 1, 2021
	Establish an MOU agreement outlining the approach for and terms under which all transportation entities will work with one another	TPB, HTA, ATM, PRITA	December 1, 2021

Recommendation C: Develop and use objective frameworks for project selection.

In Puerto Rico, poor performance management results in a backlog of maintenance projects, high costs relative to service levels, and a disconnected system that cannot effectively execute a multi-modal strategy. HTA has historically struggled to deploy its available capital funding to maintain SOGR; however, unmet targets are not due to lack of available funding but are rather a result of HTA's struggle to successfully execute its backlog of projects.

In section 12.1, the Fiscal Plan lays out a clear methodology for HTA to better manage its capital expenditure and ensure that it can deliver its ambitious capital program. Under its Optimizing Construction Cost fiscal measure, HTA commits to reforms that will allow it to reduce costs and ensure project delivery. As part of this Reform, HTA commits to consistently using these frameworks for all investment decisions and tracking its use of the selection criteria (e.g., how chosen projects have scored relative to other selected and un-selected projects) with one another.

Exhibit 82: Implementation plan for project performance management¹¹¹

Optimize capital expenses	Propose set of projects that would benefit most from creation of standard project definition workflows (e.g., commonalities, frequencies)	HTA	Ongoing
	Propose set of projects that would benefit most from creation of standard design packages (e.g., number of stakeholders, frequencies)	HTA	Ongoing
	Identify and propose opportunities to leverage alternative procurement methods	HTA	Ongoing
	Identify capability gaps within in-house construction team	HTA	December 31, 2021
	Pilot improvements to address opportunities areas identified in capital delivery diagnostic	HTA	Ongoing

¹¹¹ Full implementation plan also included in Chapter 12.1

	Use standard project definition workflows for initial set of projects	HTA	Ongoing
	Use standard design packages for initial set of projects	HTA	Ongoing
	Create and propose alternative procurement RFP(s) for eligible projects	HTA	Ongoing
	Create plan to address capabilities gaps (e.g., outsourcing, training) within the construction team	HTA	March 31, 2022
	Complete FHWA-approved process improvements (e.g., pay-item sampling) to expedite invoice processing in project close-out	HTA	June 30, 2022
	Complete implementation of electronic records management system to facilitate efficient project close-outs	HTA	June 30, 2022

Recommendation D: Improve performance management through integration in public systems, performance-based contracts, and better supervision.

At present, públicos and transportation network companies operate broadly across Puerto Rico to satisfy excess demand for transportation beyond that provided by the public sector. There is limited coordination, however, between these private operators and the public networks. Similarly, private contractors execute much of the Island's transportation construction without providing visibility into individual project performance. If managed well, the private sector can be a key partner in both operating transit systems and delivering capital projects efficiently and cost- effectively.

HTA shall complete this recommendation by carrying out existing fiscal measures. The transit enhancements in section 10.4 'Expanding transit fare revenues' lay out how to better integrate transit assets on the island. The Board will ensure that both schedules and transit card options are uniform between modes of transit to improve system

accessibility for all users. Similarly, the CIP optimization fiscal measure in Section 12.1 lays out a path for HTA to deliver its entire capital program on time and under budget.

Exhibit 83: Implementation plan for project performance management¹¹²

Measure	Action item	Responsible party	Deadline
Leverage private-sector services for improved efficiency	Design a series of initiatives that could be implemented in collaboration with private transport networks (e.g. públicos)	HTA, PRITA, private networks	December 31, 2021
	Develop a strategy for communicating with private network operators	PRITA	December 31, 2021
Transit Service Integration and Coordination	Adopt a single farecard for all public transit networks	HTA, ATM, PRITA	December 31, 2021
	Harmonize fares and schedules across TU, buses and ferries	HTA, ATM, PRITA	December 31, 2021
	Pool data resources in order to conduct common research on future initiatives	HTA, ATM, PRITA	December 31, 2021

Recommendation E: Enhance effectiveness of governance by reforming entity boards of directors, where relevant, to include fewer political appointees and more subject-matter experts.

An effective, independent board of directors for each mode-specific transportation organization would ensure that the entity's funds are optimally used to improve system performance, asset condition, and user experience of each transportation mode. Prompt implementation of the measures will increase subject-matter expertise in the governance of HTA and further insulate the board from political pressures.

In section 9.1, HTA commits to recruiting a new Board of Directors as part of the fiscal measure. The current Board of Directors is majority government stakeholders; however, to become a successful, independent governing authority, HTA shall change the Board

¹¹² Full implementation plan also included in Chapter 12.1

structure to include a majority of independent expert perspectives. Accomplishing this fiscal measure will allow HTA to ensure that technical experience governs project selection and execution, aligned with the broader aims of the island-wide transportation sector reform.

Exhibit 84: Required Implementation Actions for Recruiting a new Board of Directors for HTA

Measure	Action item	Responsible party	Deadline
Create new Board of Directors for HTA	Engage law firm to assist in legislative process	HTA	September 30, 2021
	Share draft of Law enabling the appointment of the Board with FOMB	Commonwealth	December 31, 2021
	Approve Law enabling the appointment of the Board	Commonwealth	February 28, 2022
	Hire executive recruitment firm to identify potential independent Board members	HTA	May 31, 2022
	Approve appointment of independent Board members	Commonwealth	September 30, 2022

Recommendation F: Maximize the Commonwealth's funding envelope through a more aggressive federal grants strategy and by improving bankability to attract private capital.

Puerto Rico would benefit from a holistic strategy to maximize funding flowing into its transportation network. By establishing a federal funding strategy, attracting more private investment, and increasing ancillary revenue, HTA, alongside other agencies, can improve the transportation sector's financial health and invest more in-service delivery to public transportation users. To obtain Puerto Rico's proportional share of federal funds, transportation entities must have a proactive strategy to identify, apply for, and pursue additional discretionary federal funding. Similarly, P3s and ancillary revenue are effective strategies to attract private investment into the transportation network.

Chapter 10.7 establishes a strategy for HTA to maximize its access to funding under its “Collecting more discretionary funds” fiscal measure, and Chapter 10.3 identifies ways for HTA to collect additional ancillary revenues. Furthermore, Chapter 13 proposes options for P3 opportunities to improve private funding. Each of these measures are critical as part of this reform in attracting non-Commonwealth revenue. These measures can be complemented by HTA working with AAFAF to ensure that there is a Commonwealth-wide P3 strategy that maximizes private funding as well. As part of this, HTA must review its portfolio of projects, determine which could be eligible for P3, and improve the bankability of projects as necessary to maximize the availability of non-Commonwealth funding.

Exhibit 85: Required implementation actions for maximizing HTA’s funding

Measure	Action item	Responsible party	Deadline
Improve ancillary revenue	Hire ancillary revenue management team	HTA	December 31, 2021
	Begin a campaign to acquire ancillary revenue increases (e.g., advertising)	HTA	February 28, 2022
	Begin coordination with third parties for ancillary revenue increases that require contracting (e.g., rentals)	HTA	March 31, 2022
	Begin ancillary revenue increases that require long-term planning and complex legal agreements (e.g. joint real estate development initiatives)	HTA	June 30, 2022
	Develop a comprehensive ancillary revenue strategy, which will include a full asset inventory and an analysis of administrative constraints and submit to FOMB for review	HTA	June 30, 2022

Measure	Action item	Responsible party	Deadline
Collect discretionary grants	Hire discretionary grant management team	HTA	December 31, 2021
	Begin preparing discretionary grant applications and collecting all necessary supporting documents	HTA	March 31, 2022
Pursue P3 opportunities	Evaluate and prioritize potential areas for additional P3s led by 3 rd party.	HTA/P3A	August 31, 2021
	Finalize due diligence process and desirability and convenience study.	HTA/P3A	September 30, 2021
	Evaluate different potential deal structures using variety of scenarios within fiscal plan constraints. Finalize and share with FOMB detailed opportunity by opportunity execution plan for prioritized P3 opportunities.	HTA/P3A	April 30, 2022
	Launch RFP(s) for prioritized P3	P3A	Based on execution plan and aligned with legal constraints
	Begin first new P3 agreement	HTA/P3A	Based on execution plan and aligned with legal constraints

Tracking Progress Towards Outcomes

By directly implementing, or assisting the Commonwealth in implementing, these recommendations, HTA will have more capacity to improve the transportation sector and deliver better outcomes for the citizens of Puerto Rico. To ensure that HTA and the Commonwealth are making concrete progress, HTA shall collect and track relevant metrics on the outcomes of the system. An example of an outcome-based scorecard is provided below.

Exhibit 86: An example outcome-based scorecard, with Puerto Rico's current performance compared to the US median

Objectives	Impact metrics	Current PR performance	US median performance
	Road condition: % of interstate pavement in poor condition	12	2
	Transit revenue generation: Non-fare directly-generated funding as % of total	12.3	23.7
	Train system condition: # of failures per 1M revenue mile	373	55
	Driving experience: Hours lost to congestion per person per year	58	54
	Sustainable commuting options: % sustainable mode share	22%	27%
	Road safety: Road fatalities, # per 100M VMT	2.0	1.1
	Air quality: Days with AQI > 100	19	4

The recommendations above articulate a vision for Puerto Rico's transportation sector that enhances safety, condition, performance, and sustainability. Implementation of the outlined recommendations and execution steps therein will result in a well-performing public transportation system, which can ultimately catalyze economic growth for the people of Puerto Rico. Improving the transportation system will be a gradual process that builds momentum over time as outcomes are incrementally realized through implementation of these recommendations. Nonetheless, by ensuring that operating assets are used efficiently and projects are delivered on time and on budget, Puerto Rico can recycle savings back into the system. These improvements will ultimately have an impact on every user of the transportation network, supporting shorter, more predictable commutes; improved road safety; and cleaner air. With key investments and dedicated management, HTA and the other transportation authorities can build a safer, more sustainable, and more livable environment for its residents.

APPENDIX A – IMPLEMENTATION PLAN & REPORTING REQUIREMENTS

CHAPTER 18: COMPREHENSIVE IMPLEMENTATION PLAN REQUIRED ACTIONS¹¹³

Measure	Action item	Responsible party	Deadline
Implement bi-directional tolling	Procurement of a third-party consultant to conduct traffic studies for proposed locations	HTA	Complete
Implement bi-directional tolling	Completion of study with cost-benefit analyses and recommendations for plazas	HTA	In progress
Optimize Capital expenses	Propose set of projects that would benefit most from creation of standard project definition workflows (e.g., commonalities, frequencies)	HTA	Ongoing
Optimize Capital expenses	Propose set of projects that would benefit most from creation of standard design packages (e.g., number of stakeholders, frequencies)	HTA	Ongoing
Optimize Capital expenses	Identify and propose opportunities to leverage alternative procurement methods	HTA	Ongoing
Optimize Capital expenses	Implement pilot improvements to address opportunities areas identified in capital delivery diagnostic	HTA	Ongoing
Optimize Capital expenses	Use standard project definition workflows for initial set of projects	HTA	Ongoing
Optimize Capital expenses	Use standard design packages for initial set of projects	HTA	Ongoing
Optimize Capital expenses	Create and propose alternative procurement RFP(s) for eligible projects	HTA	Ongoing

¹¹³ The implementation of these initiatives will be taken over by PRITA if the institutional reorganization of the transportation landscape in Puerto Rico goes ahead as planned. However, as mentioned before, this Plan assumes that HTA will continue to maintain its current responsibilities, which include the operation of Tren Urbano and its feeder buses. Hence, this timeline assigns to HTA many initiatives that might eventually fall under the umbrella of PRITA.

Create new Board of Directors for HTA	Engage law firm to assist in legislative process	HTA	June 30, 2021
Implement bi-directional tolling	Roadside equipment (RSS) request for proposal published	HTA	June 30, 2021
Optimize toll fare revenue	Introduce optimized electronic fare collection system	HTA	July 31, 2021
Increase toll fine revenue	Resume fine collections with optimized electronic fine collection system	HTA	July 31, 2021
Reduce healthcare costs	Develop RFP to find and identify new healthcare provider consistent with certified budget	HTA	July 31, 2021
Adopt project-specific KPIs	Submit proposed project-specific KPIs to FOMB for approval	HTA	August 30, 2021
Conduct personnel mapping by asset	Create an RFP for procurement of a third-party firm to conduct personnel mapping and productivity reporting study	HTA	August 30, 2021
Increase toll fine revenue	Develop draft legislation for tiered fine system/ fine inflation increases and submit for FOMB review	Commonwealth	August 30, 2021
Pursue P3 opportunities	Evaluate and prioritize potential areas for additional P3s led by 3rd party.	HTA/P3A	August 31, 2021
Track impact of reforms	Adopt transportation sector reform KPIs per the Commonwealth's selected scorecard	Commonwealth /HTA	August 31, 2021
Re-allocate transit assets to PRITA	Perform initial assessment of legal, Federal Transit Administration (FTA) and Transportation Asset Management Plan (TAMP) considerations	PRITA, HTA, AAFAF	September 1, 2021
Create new Board of Directors for HTA	Share draft of Law enabling the appointment of the Board with FOMB	Commonwealth	September 30, 2021
Adopt project-specific KPIs	Approve project-specific KPIs (with any necessary revisions) and determine a reporting cadence	FOMB	September 30, 2021
Optimize toll fare revenue	Issue RFP for new toll operator	HTA	September 30, 2021

Reduce healthcare costs	Select new healthcare provider	HTA	September 30, 2021
Optimize Capital expenses	Refine analysis to identify incremental CapEx delivery optimization and soft cost efficiency opportunities, and conduct working sessions with FOMB to confirm.	HTA	September 30, 2021
Pursue P3 opportunities	Finalize due diligence process and desirability and convenience study.	HTA/P3A	September 30, 2021
Allocate transportation assets into mode-specific entities	Develop a program foundation to align on priorities, success metrics, measures and future state organizational structure to demonstrate progress	PRITA, HTA, DTOP, AAFAF	October 1, 2021
Allocate transportation assets into mode-specific entities	Organize assets, roles and responsibilities within existing entities into asset-class groupings	PRITA, HTA, DTOP, AAFAF	October 1, 2021
Allocate transportation assets into mode-specific entities	Identify legal and other obstacles to asset reorganization and present to FOMB	PRITA, HTA, DTOP, AAFAF	October 1, 2021
Allocate transportation assets into mode-specific entities	Segregate costs/revenues associated to tolled, non-tolled roads and transit assets (i.e. labor, opex, etc.) and assign by asset class	PRITA, HTA, DTOP, AAFAF	October 1, 2021
Re-allocate transit assets to PRITA	Achieve minimum financial, legal, and technical capacity to effectively manage FTA funds	PRITA, AAFAF	October 1, 2021
Implement bi-directional tolling	Note to proceed per RSS request for proposal	HTA	October 31, 2021
Reassess Tren Urbano contracts	Begin reassessment of Tren Urbano operating contract, which is set to end in 2032	HTA/PRITA/P3A	October 31, 2021
Implement toll fare increases	Hold sessions informing public of upcoming fare adjustments	HTA	November 1, 2021
Establish Transportation Policy Board	Establish an independent advisory board responsible for setting long term holistic strategic plans and oversight of investment prioritization	AAFAF	November 1, 2021

or analogous entity	processes to advance transportation from an island-wide perspective		
Allocate transportation assets into mode-specific entities	Amend/update entity organizational structures to accommodate restructured roles and responsibilities	PRITA, HTA, DTOP, AAFAF	November 15, 2021
Conduct personnel mapping by asset	Study begins with selected third-party firm	HTA	November 30, 2021
Increase toll fine revenue	Approve Law enabling fine price modifications	Commonwealth	November 30, 2021
Reduce healthcare costs	Finalize new healthcare insurance contract and submit to FOMB for review	HTA	November 30, 2021
Establish Transportation Policy Board or analogous entity	Establish processes and guidelines for reviewing and reporting on the execution of strategic plans and providing transparency and guidance on corrective action	Transportation Policy Board	December 1, 2021
Establish Transportation Policy Board or analogous entity	Assess and develop mechanisms to lower traffic congestion and increase accessibility to transit	TPB	December 1, 2021
Create new Board of Directors for HTA	Approve Law enabling the appointment of the Board	Commonwealth	December 31, 2021
Improve ancillary revenue	Hire ancillary revenue management team	HTA	December 31, 2021
Introduce new congestion management mechanisms - DTL	Complete planned DTLs	HTA	December 31, 2021
Collect discretionary grants	Hire discretionary grant management team	HTA	December 31, 2021
Reduce healthcare costs	Begin new healthcare insurance contract	HTA	December 31, 2021

Introduce new congestion management mechanisms	Identify potential new BRT lines	HTA	December 31, 2021
Optimize Capital expenses	Identify capability gaps within in-house construction team	HTA	December 31, 2021
Re-allocate transit assets to PRITA	Specify, procure, and implement required system to operate transit assets (e.g., IT infrastructure)	PRITA	December 31, 2021
Leverage private-sector services for improved efficiency	Design a series of initiatives that could be implemented in collaboration with private transport networks (e.g. públicos)	HTA, PRITA, private networks	December 31, 2021
Leverage private-sector services for improved efficiency	Develop a strategy for communicating with private network operators	PRITA	December 31, 2021
Transit Service Integration and Coordination	Adopt a single farecard for all public transit networks	HTA, ATM, PRITA	December 31, 2021
Transit Service Integration and Coordination	Harmonize fares and schedules across TU, buses and ferries	HTA, ATM, PRITA	December 31, 2021
Transit Service Integration and Coordination	Pool data resources in order to conduct common research on future initiatives	HTA, ATM, PRITA	December 31, 2021
Optimize Capital expenses	Identify capability gaps within in-house construction team	HTA	December 31, 2021
Improve ancillary revenue	Hire ancillary revenue management team	HTA	December 31, 2021
Implement toll fare increases	Increase toll fares in line with the Fiscal Plan	HTA	January 1, 2022
Implement toll fare increases	Implement recurring toll fare increases at end of each Fiscal Year	HTA	January 1, 2022-2051
Update KPIs	Confirm relevance of existing KPIs and propose any updates that might be necessary	HTA	January 30, 2022

Create new Board of Directors for HTA	Hire executive recruitment firm to identify potential independent Board members	HTA	January 31, 2022
Promote TOD	Identify barriers that prevent denser development near transit	HTA, ATM, and PRITA	January 31, 2022
Improve ancillary revenue	Begin a campaign to increase ancillary revenue through short-term gains (e.g., advertising)	HTA	February 28, 2022
Reassess Tren Urbano contracts	Launch a competitive procurement process for Tren Urbano operating contract	HTA/PRITA/	February 28, 2022
Create new Board of Directors for HTA	Approve Law enabling the appointment of the Board	Commonwealth	February 28, 2022
Optimize toll fare revenue	Select new toll operator and begin contract negotiations	HTA	February 28, 2022
Increase toll fine revenue	Introduce tiered fine system	HTA	February 28, 2022
Reassess Tren Urbano contracts	Begin operation of Tren Urbano under new contract terms	P3A	February 28, 2023
Increase toll fine revenue	Implement recurring toll fine increases at end of each Fiscal Year	HTA	March 31, 2022
Optimize Capital expenses	Create plan to address capabilities gaps (e.g., outsourcing, training) within the construction team	HTA	March 31, 2022
Improve ancillary revenue	Begin coordination with third parties for ancillary revenue increases that require contracting (e.g., rentals)	HTA	March 31, 2022
Collect discretionary grants	Begin preparing discretionary grant applications and collecting all necessary supporting documents	HTA	March 31, 2022
Implement bi-directional tolling	Phase 1: Collection begins for ~6 plazas	HTA	April 1, 2022
Optimize toll fare revenue	Finalize new operator contract and submit for FOMB review	HTA	April 30, 2022
Pursue P3 opportunities	Evaluate different potential deal structures using variety of scenarios within fiscal plan constraints. Finalize and share with FOMB detailed opportunity by opportunity	HTA/P3A	April 30, 2022

	execution plan for prioritized P3 opportunities.		
Implement bi-directional tolling	Phase 2: Collection begins for up to ~7 plazas	HTA	May 1, 2022
Create new Board of Directors for HTA	Hire executive recruitment firm to identify potential independent Board members	HTA	May 31, 2022
Create new Board of Directors for HTA	Approve appointment of independent Board members	Commonwealth	June 30, 2022
Conduct personnel mapping by asset	Study concludes, and HTA is able to assess the impact of asset transfers based on the mapping of personnel	HTA	June 30, 2022
Optimize toll fare revenue	Begin expansion of Open Road Tolling	HTA	June 30, 2022
Improve ancillary revenue	Begin ancillary revenue increases that require long-term planning and complex legal agreements (e.g. joint real estate development initiatives)	HTA	June 30, 2022
Improve ancillary revenue	Develop a comprehensive ancillary revenue strategy, which will include a full asset inventory and an analysis of administrative constraints and submit to FOMB for review	HTA	June 30, 2022
Implement TU improvements	Complete repair of Point of Sale (POS) machines to enable credit card usage	HTA	June 30, 2022
Introduce new congestion management mechanisms	Begin traffic signal optimization	HTA	June 30, 2022
Optimize Capital expenses	Complete FHWA-approved process improvements (e.g., pay-item sampling) to expedite invoice processing in project close-out	HTA	June 30, 2022
Optimize Capital expenses	Complete implementation of electronic records management system to facilitate efficient project close-outs	HTA	June 30, 2022
Allocate transportation	Transfer personnel and resources (as applicable) to the relevant entities	PRITA, HTA, DTOP, AAFAF	June 30, 2022

assets into mode-specific entities			
Integrate transit networks	Adopt single farecard across systems	HTA, ATM, and PRITA	June 30, 2022
Optimize toll fare revenue	Begin P3 of toll highways under new contract	HTA	June 30, 2022
Track impact of reforms	Adopt transportation sector reform KPIs per the Commonwealth's selected scorecard	AAFAF	August 31, 2022
Reassess Tren Urbano contracts	Select new Tren Urbano operator	P3A	August 31, 2022
Implement TU improvements	Enhance TU ridership rules	HTA	September 30, 2022
Create new Board of Directors for HTA	Approve appointment of independent Board members	Commonwealth	September 30, 2022
Reassess Tren Urbano contracts	Draft new operating contract and submit to FOMB for review	HTA/PRITA/	November 30, 2022
Integrate transit networks	Begin partnerships with private transport networks	HTA, PRITA, Private networks	December 31, 2022
Reduce pension costs	Implement pension reductions of up to 8.5% for qualifying employees	HTA	December 31, 2022
Integrate transit assets under a unified PRITA	Complete transfer of assets per transportation sector reform	HTA, ATM, PRITA, DTOP, and AAFAF	June 30, 2023
Allocate transportation assets into mode-specific entities	Finalize transfer of roles and responsibilities for non-tolled roads from HTA to DTOP	PRITA, HTA, DTOP, AAFAF	June 30, 2023
Conduct personnel mapping by asset	HTA provides the assessment to FOMB	HTA	July 31, 2023

Introduce new congestion management mechanisms	Create more dedicated BRT spaces (e.g., special road lanes and drop-off zones)	HTA, Commonwealth, and Municipalities	June 30, 2024
Pursue P3 opportunities	Launch RFP(s) for prioritized P3s	P3A	Based on execution plan and aligned with legal constraints
Pursue P3 opportunities	Begin first new P3 agreement	HTA/P3A	Based on execution plan and aligned with legal constraints

CHAPTER 19: POST-CERTIFICATION REPORTING REQUIREMENTS FOR HTA

As it rigorously tracks the Plan's implementation, and as part of HTA's improved fiscal governance, to facilitate the Oversight Board accurately estimating projected revenues and expenditures going forward, HTA will need to submit a series of monthly reports to the FOMB. These will be due no later than the 15th day after the end of each month. The reports must reflect: i) Budget to Actuals performance; ii) liquidity; iii) bank balances; iv) CapEx obligations; v) progress in executing the Fiscal Measures of this Plan; vi) progress in executing capital delivery; vii) changes in headcount; viii) metrics of organizational productivity; ix) progress in executing HTA's MOUs with FHWA and EFL; and x) toll road traffic volume. The FOMB, with some exceptions, has been pleased with HTA's adherence to these reporting requirements to-date, and has found the data provided by HTA a valuable tool to monitor performance and implementation of the Fiscal Plan.

Budget to Actuals (B2A) Performance: HTA must use a template from FOMB to report its Year to Date (YTD) performance across all items in its Certified Budget. The Authority must also use another FOMB template to disclose additional details on certain budget items like CIP costs, operating expenses, and professional fees.

Liquidity: HTA must provide a liquidity report that includes actual cash flows by week for YTD and forecasted until the end of the Fiscal Year. All cash flows (receipts and disbursements) must be shown under the same classification that is followed in the Authority's Certified Budget. This will make it easier to track HTA's B2A performance on a cash basis; these should also be clearly separated into an OpEx and CapEx component.

Bank Balances: HTA must disclose all changes in its bank account balances and classify all bank accounts as capital or operational. In addition, it must show how these changes correspond to the cash flows laid out in its Liquidity report and use a template from the FOMB to display the projected impact of any funds that are in transit at the time of the report.

CapEx Obligations: HTA must disclose the amount of CapEx funds that are obligated for capital expenses at the end of each month and how these funds break down by project.

Fiscal Measures: HTA must provide an update on the progress of the Fiscal Measures that are included in this Plan, including the revenues/cost savings achieved by implementing the measures YTD. The Authority must provide a detailed justification for any measure's underperformance, describe the main reasons it is behind, and lay out a path for getting its implementation back on track.

Capital Delivery (Pre-Construction): HTA must report, at a minimum, the following information for every project in the Pre-Construction phase: i) the unique identifier for the project (AC Code); ii) the description of the project (e.g., pavement rehabilitation, or bridge reconstruction); iii) the project's classification under one of the categories

recognized in this Fiscal Plan (e.g., PEMOC, FHWA, and/or Abriendo Caminos); iv) the miles and roads affected by the project; v) the programmed bid opening date; vi) the actual bid opening date; vii) the programmed bid award date; viii) the actual bid award date; ix) the programmed NTP letter date; x) the actual NTP letter date; xi) the contractor in charge of the project; xii) the engineer estimate for the project cost; and xiii) the actual bid cost. HTA must also provide any other information about the pre-construction process that the FOMB might request during the course of the Fiscal Year.

Capital Delivery (Construction): HTA must report, at a minimum, the following information for every project that is in the Construction phase: i) the unique identifier for the project (AC Code), ii) the description of the project (e.g., pavement rehabilitation, or bridge reconstruction); iii) the project's classification under one of the categories recognized in this Fiscal Plan (e.g., PEMOC, FHWA, and / or Abriendo Caminos); iv) the miles and roads affected by the project, v) the region of the project (e.g., North, East, South, West), vi) the longitude and latitude of the project, vii) the original cost of the project, viii) the revised cost of the project, ix) the amount of dollars already disbursed, x) the original date of project completion, xi) the revised date of project completion, xii) the contractor in charge of the project, xiii) the HTA employee in charge of the project. HTA must also provide any other information about the construction process that might the FOMB might request during the Fiscal Year. This includes rolling out a CapEx dashboard that will enable stakeholders of the system to understand where improvements are ongoing as well as the performance of various projects.

Headcount: HTA must disclose the number of employees that enter and leave the Authority during each month. It should inform the FOMB about their division (e.g., Construction, Finance) and professional role (e.g., Engineer, Secretary).

Organizational Productivity: HTA must disclose the number of employees by division per millions of CapEx dollars disbursed during each month. It must also report the following information for the personnel in its construction-related divisions. It will need to develop a template to report: i) the number of employees (broken down by professional role) working on each project during each project phase, and ii) the number of projects each employee oversees (including hours dedicated to each project, if applicable).

FHWA – HTA MOU: HTA must provide an update on the progress of the initiatives outlined in its MOU with FHWA. At a minimum, this update must include the initiative's launch date, estimated completion date, and the work performed on it during each month. The Authority must also provide a detailed justification for any delays in MOU implementation, describing the main drivers of the delay and providing a plan of actions path that will get MOU implementation back on track. It must also disclose any other information about its MOU with FHWA that the FOMB might request during the course of the Fiscal Year.

EFL – HTA MOU: HTA must provide an update on the progress of its collaboration with EFL. More specifically, HTA must report the following information for every EFL project: i) the unique identifier of the project (AC Code), ii) the region of the project, iii) the miles and the roads affected by the project, iv) the original cost of the project, v) the revised cost of the project, vi) the amount of dollars already disbursed, vii) the original date of project completion, viii) the revised date of project completion. The Authority must also provide a detailed justification for any delays on these collaborative projects with EFL. It needs to describe the main reasons for the delays and a plan of action to get back on track.

Toll Road Traffic Volume: HTA must report the monthly volume of vehicle traffic in all the toll roads of Puerto Rico, regardless of whether these roads are partly or wholly owned by concessionaires.

Project-level capital performance: HTA must report its progress against capital delivery on a project-by-project basis, once the necessary IT and finance reporting infrastructure is in place to do so.

Exhibit 87: Post-certification reporting requirements (financials & traffic volume)

Report type	Detail	FOMB reporting cadence	Public reporting
Budget to Actuals	<ul style="list-style-type: none"> Report Year to Date (YTD) performance across all items in the Certified Budget Disclose additional details on certain budget items like CIP costs, operating expenses, and professional fees 	<ul style="list-style-type: none"> Monthly 	<ul style="list-style-type: none"> Monthly
Liquidity & bank balances	<ul style="list-style-type: none"> Provide a liquidity report that includes actual cash flows by week for YTD and forecasted until the end of the Fiscal Year, using the same classification of revenues and expenses as the Certified Budget Disclose all changes in bank account balances and classify all bank accounts as capital or operational Show how changes in bank balances correspond to cash flows and display the projected impact of any funds that are in transit at the time of the report 	<ul style="list-style-type: none"> Monthly 	<ul style="list-style-type: none"> Monthly
Fiscal measures	<ul style="list-style-type: none"> Provide an update on the progress of the Fiscal Measures that are included in this Plan, including the revenues / cost savings achieved by implementing the measures YTD Provide a detailed justification for any measure's underperformance, describe the main reasons it is behind, and lay out a path for getting its implementation back on track 	<ul style="list-style-type: none"> Monthly 	<ul style="list-style-type: none"> Monthly
Toll road traffic	<ul style="list-style-type: none"> Report the monthly volume of vehicle traffic in all the toll roads of Puerto Rico 	<ul style="list-style-type: none"> Monthly 	<ul style="list-style-type: none"> Monthly

Exhibit 88: Post-certification reporting requirements (labor data and MOU obligations)

Report type	Detail	FOMB reporting cadence	Public reporting
Headcount	<ul style="list-style-type: none"> Provide information on all headcount changes (openings, additions, exits, closings) Classify all headcount changes by division and by professional roles 	<ul style="list-style-type: none"> Monthly 	<ul style="list-style-type: none"> Monthly
Organizational productivity	<ul style="list-style-type: none"> Disclose number of employees by division per Million of CapEx dollars disbursed Provide the number of employees (broken down by professional role) working on each project during each project phase Provide the number of projects overseen by each employee (including hours dedicated to each project) 	<ul style="list-style-type: none"> Monthly 	<ul style="list-style-type: none"> Monthly
FHWA – HTA MOU	<ul style="list-style-type: none"> Provide an update on the progress of initiatives outlined in the FHWA – HTA MOU, including: a) Launch date of each initiative, b) Estimated completion date of each initiative and c) Work performed on each initiative during each month Explain drivers of underperformance and lay out a path for getting implementation back on track 	<ul style="list-style-type: none"> Monthly 	<ul style="list-style-type: none"> Monthly
EFL – HTA MOU	<ul style="list-style-type: none"> Provide an update on collaboration with EFL, including: a) Unique identifier of each EFL project (AC Code), b) Region of the project, c) Miles and roads affected by the project, d) Original cost of the project, e) Revised cost of the project, f) Amount of dollars already disbursed, g) Original date of project completion, h) Revised date of project completion 	<ul style="list-style-type: none"> Monthly 	<ul style="list-style-type: none"> Monthly

Exhibit 89: Post-certification reporting requirements (capital delivery)

Report type	Detail	FOMB reporting cadence	Public reporting
Capital delivery (pre-construction)	<ul style="list-style-type: none"> Provide the following information for every project in the pre-construction phase: a) Unique identifier of the project (AC Code), b) Description of the project (e.g., pavement rehabilitation, bridge reconstruction etc.), c) Classification of the project under one of the categories recognized in this Fiscal Plan (e.g., PEMOC, FHWA, Abriendo Caminos), d) Miles and roads affected by the project, e) Programmed bid opening date, f) Actual bid opening date, g) Programmed bid award date, h) Actual bid award date, i) Programmed NTP letter date, j) Actual NTP letter date, k) Contractor in charge of the project, l) Engineer estimate for project cost, m) Actual bid cost Provide any other information that might be requested by the FOMB 	<ul style="list-style-type: none"> Monthly 	<ul style="list-style-type: none"> N/A
Capital delivery (ER construction)	<ul style="list-style-type: none"> Provide a list of active construction and pre-construction projects and disbursements 	<ul style="list-style-type: none"> Monthly 	<ul style="list-style-type: none"> N/A
CapEx obligations	<ul style="list-style-type: none"> Disclose the amount of funds that are obligated for capital expenses, broken down by project 	<ul style="list-style-type: none"> Monthly 	<ul style="list-style-type: none"> N/A

Exhibit 90: Post-certification reporting requirements (capital delivery)

Report type	Detail	FOMB reporting cadence	Public reporting
Capital delivery (construction)	<ul style="list-style-type: none"> Provide the following information for every project in the construction phase: a) Unique identifier of the project (AC Code), b) Description of the project (e.g., pavement rehabilitation, bridge reconstruction etc.), c) Classification of the project under one of the categories recognized in this Fiscal Plan (e.g., PEMOC, FHWA, Abriendo Caminos), d) Miles and roads affected by the project, e) Region of the project (e.g., North, East, South, West), f) Longitude and latitude of the project, g) Original cost of the project, h) Revised cost of the project, i) Amount of dollars already disbursed, j) Original date of project completion, k) Revised date of project completion, l) Contractor in charge of the project, m) HTA employee in charge of the project Provide any other information that might be requested by the FOMB 	<ul style="list-style-type: none"> Monthly 	<ul style="list-style-type: none"> N/A
Capital delivery (Public dashboard)	<ul style="list-style-type: none"> Provide a list of active projects across all program types (i.e., Federal, State, ER, EFL) Describe progress completed during the month with key project information (e.g., NTP date, expected cost and completion date, delays and cost overruns, region and type of the project) 	<ul style="list-style-type: none"> Monthly 	<ul style="list-style-type: none"> Monthly

APPENDIX B – EASTERN FEDERAL LANDS MEMORANDUM OF UNDERSTANDING

OBLIGATIONS, RESPONSIBILITIES, AND FUNDING

A. The PRHTA agrees to:

1. Designate a point of contact with decision-making authority so that all communication regarding the Work will be coordinated and managed through such person;
2. Provide the required funding for the Work through assigned ER funds, PRHP funds, or other funding sources as appropriate and as determined by PRHTA;
3. Allow EFLHD to pay for all costs related to meeting federal requirements as well as for the management, design, and construction of the Work. Costs shall include, but are not limited to, preparation of the environmental documentation, permits and other clearances, design, construction, construction engineering, and other related engineering, program and project administration activities;
4. Provide design assistance to EFLHD and its designees, participate in progress meetings, design field reviews and approvals, and final construction inspections, as required;
5. Review and comment on the scope, prioritization, schedule, budget, and subsequent updates of the proposed projects within the timelines requested by EFLHD;
6. Maximize use of existing permit exemptions and programmatic agreements by providing guidance and general assistance to EFLHD and its designees in the preparation of permits, and when necessary, submitting permit applications to obtain clearances from all permitting agencies in the Commonwealth of Puerto Rico and Municipalities;
7. Assist EFLHD and its designees in preparing permit applications to obtain all required federal permits and clearances;
8. Acquire necessary right-of-way (ROW);
9. Coordinate and execute utility agreements to provide timely relocations;
10. If the actual costs of the Work are anticipated to exceed the estimates in the approved DDIRs, the PRHTA and EFLHD agree to utilize one or more of the following options:
 - a. EFLHD and PRHTA may revise the budget to reflect the new estimate(s) and PRHTA will transfer additional funds needed to complete the construction of the Work. EFLHD will request additional funds in time to have them in place before funds are exhausted. PRHTA will determine the type of supplemental funds to be transferred based on the availability of funding at the time of request to ensure compliance with the Anti-Deficiency Act (31 U.S.C. § 1341(a)(1)).
 - b. Reduce the scope of work such that available funding is sufficient to cover the estimated costs.
 - c. EFLHD may cease work on the unfunded aspects of the Work: or
 - d. Any combination of (a), (b) or (c).
11. In addition, for projects designed by PRHTA and its designees:
 - a. Provide all Plans, Specifications, and Estimate (PS&E) packages for general EFLHD review and comments. Address comments provided by EFLHD and provide a written explanation of how each comment was addressed within the timelines requested by EFLHD;

- b. Provide ready for procurement/construction PS&E packages in Federal Fiscal Year 2019 (FY19) addressing all EFLHD comments. For projects to be advertised for construction in FY19, provide the final PS&E a minimum of 3 months before the quarter in which the project is to be advertised. The PS&E package includes, but is not limited to:
 - i. Project priority list that organizes PS&E packages in order of priority for PRHTA;
 - ii. Plans, specifications, construction cost estimates, design technical reports, quantity calculations, NEPA documentation, permits, agreements, and clearances from federal and local governments;
 - iii. PS&E package certification indicating that all projects issues related to design, NEPA, permitting, ROW, and utilities have been addressed and the projects are ready for construction;
 - c. Assist answering bidder questions within 3 working days, when assistance is requested. Assist in other aspects of the procurement process as needed; and
 - d. Provide technical assistance as needed to respond to issues during construction within the timelines requested by EFLHD.
12. Participate in monthly status meetings as required.
13. Throughout the course of EFLHD's delivery of projects, EFLHD, PHRTA and FHWA-PR/USVI will work together to identify opportunities for peer exchanges, technical support training and education to PHRTA's staff.

B. The FHWA-PR/USVI agrees to:

- 1. Provide federal-aid funding for the Work including ER and other Puerto Rico Highway Program funds as appropriate and approve the transfer of funds from the PRHTA ER funds to the EFLHD prior to the start of any work by EFLHD as presented in the Financial Plan;
- 2. Delegate to EFLHD the approval of all federal actions including but not limited to:
 - a. National Environmental Policy Act (NEPA) documentation and permits;
 - b. ROW plans and administrative review of ROW acquisition and utility relocation activities by PRHTA, when applicable;
 - c. The statements of work and award of any consultant contracts for the Work;
 - d. Final PS&Es for advertisement, all contract administration efforts, construction inspections, and approval of the completed project; and
 - e. Authorization for contract awards, contract administration, contract modifications, inspection, project acceptance, and contract completion.
- 3. Provide guidance on ER funding eligibility when requested;
- 4. Keep track of projects authorized based on the approved ER program;
- 5. Review and update the DDIRs if a change in scope occurs or there is an increase of twenty (20) percent from the original estimates;
- 6. Participate in EFL's FIRE and reviews as required or requested by EFL;
- 7. Participate in monthly status meetings;
- 8. Throughout the course of EFLHD's delivery of projects, EFLHD, PHRTA and FHWA-PR/USVI will work together to identify opportunities for peer exchanges, technical support training and education to PHRTA's staff.

C. EFLHD agrees to:

1. Be the lead federal agency for applicable federal actions, project development, and overall coordination of the Work;
2. Be responsible to meet timetable and delivery budgets while ensuring full compliance with applicable federal laws and regulations;
3. Accept funds as defined in Article III of this agreement;
4. Coordinate and develop the scope, schedule and budget for the delivery of the sites, evaluate project development approach and proceed with procurement as deemed best by EFLHD;
5. Procure and administer any consultant assistance contracts deemed necessary;
6. Review PS&E packages and provide technical support for quality control (QC) of work;
7. For projects to be designed by EFLHD:
 - a. Conduct survey and mapping necessary for design activities;
 - b. Conduct subsurface investigations;
 - c. Lead the preparation of environmental documents required by the NEPA, as amended, and 23 CFR 771, including the Environmental Impact Statement / Record of Decision, Categorical Exclusion, Environmental Assessment / Finding of No Significant Impact, and 4(f) Evaluation, and coordinate the necessary approvals for Section 106 of the National Historic Preservation Act, the Endangered Species Act, and the Clean Water Act;
 - d. Prepare environmental permit applications as required;
 - e. Prepare necessary ROW documentation for PRHTA to acquire any necessary ROW
 - f. Develop and administer utility agreements, if necessary;
 - g. Prepare preliminary and final PS&E packages for the Work using PRHTA design standards and specifications.
 - h. Evaluate the resiliency of the proposed replacement and consider incorporating cost effective features that will make the facilities more resilient and reduce the risk of damage from future events. Document all resiliency measures implemented as required in the ER Manual.

For projects designed by PRHTA:

- a. Provide Geotechnical and Structural Engineering reviews for the regular landslide projects;
- b. Provide general reviews of PS&E packages, as deemed necessary;
- c. Develop Administrative Contract Specifications to add EFLHD's procurement and contract administration requirements on the projects; and
- d. Packaging/bundling the projects for bidding;
9. Provide brief written status reports on a monthly basis to PHRTA, FHWA PR/USVI, and the USDOT Transportation Recovery Representative on the Work;
10. Advertise and award the construction contract(s);
11. Administer the construction contract(s), including necessary construction engineering and inspection (CEI);
12. Process payments to consultants, contractors and utility companies, as applicable;
13. Conduct final inspection of the Work;
14. Promptly initiate close-out and return unexpended funds once final costs for the Work are known, including the transfer of the facilities after acceptance by the owner;
16. Coordinate with PRHTA's National Bridge Inventory program manager to ensure all

load rating work will meet Puerto Rico's legal load requirements as well as
Emergency Vehicle loadings as established in the FAST Act.

17. Use SP-934 specification for all structural concrete work

18. Throughout the course of EFLHD's delivery of projects, EFLHD, PHRTA and
FHWA-PR/USVI will work together to identify opportunities for peer exchanges,
technical support training and education to PHRTA's staff.

APPENDIX C – POTENTIAL DRIVERS OF FUTURE REVENUES

C.1) Trends to be monitored over time

Traffic volumes in HTA's road network, and therefore its toll fare revenue, are forecast to grow long term primarily based on inflation and GNP projections. However, there are several macroeconomic trends in the transportation sector which may cause actual traffic volume growth through FY51 to be lower in the long term than current projections. As a result, HTA should continue to monitor and may consider additional factors to update future forecasts. Considerations including (1) a shift to public transit; (2) vehicle ownership patterns; (3) commuting behaviors; and (4) autonomous vehicle uptake may impact traffic volumes, and consequently HTA's revenue baseline, in the long term.

- 1. Shift to public transit:** Adoption of the transportation sector reforms is the first step in a shift to make public transit a viable and accessible option in the long term for commuters in Puerto Rico. Once the impact of the reforms is reflected, it is anticipated that Puerto Rico will witness an increase of public transit users, thus yielding increased revenues for both Tren Urbano and the feeder bus route. For instance, if San Juan were to perform at the average US city level, 37,000 more households would commute more sustainably.¹¹⁴ However, this change could be coupled with a shift away from private vehicles, which could have a potential negative impact on toll revenues.
- 2. Vehicle ownership patterns:** In the past few years, ridesharing has become an affordable and increasingly accessible option for transportation. Increased uptake of ridesharing platforms may reduce private vehicle ownership, and as a result, overall traffic levels could be expected to decline over time. Changed ownership patterns could therefore have a negative impact on toll revenues in the long term.
- 3. Commuting behaviors:** The impact of COVID-19 initially decreased traffic volumes in Puerto Rico, especially during the end of FY20 at the height of the pandemic. However, while Puerto Rico is now witnessing a gradual return to normal traffic levels, a move to hybrid work-from-home models may result in lower traffic levels long term. Decreased commuter traffic may result in marginally lower traffic volumes for toll roads, negatively impacting toll revenues, as well as lower transit system use, negatively impacting transit revenues through FY51.
- 4. Autonomous vehicle adoption:** Autonomous vehicle technologies are developing rapidly and will see some adoption over the next thirty years. One key assumption with autonomous vehicle adoption and owner behavior is the reduced value of saved time, thus disincentivizing use of toll roads at current rates. This may have a potential negative impact on congestion-relieving toll roads in the long term as autonomous vehicles witness increased uptake.¹¹⁵

¹¹⁴ Includes carpooling, walking, bicycling, and public transit. The current U.S. average is 27% of households commuting sustainably, up from San Juan's current 22% of households.

¹¹⁵ <https://www.fitchratings.com/research/us-public-finance/the-effect-of-automated-vehicles-on-toll-roads-automated-vehicles-are-likely-positive-congestion-reliever-toll-roads-are-most-vulnerable-03-02-2020>

Collectively, the aforementioned factors would likely decrease toll fare revenues over the long term, though the decline may be somewhat offset by increased transit fare revenue following greater use of the public transportation system. While current projections account for factors of economic and population growth, future estimates of traffic patterns may consider these factors to arrive at a more accurate baseline projection.